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Corner

A Whole in N

Hedrings Park

Glass Pits in Train

Minor Corner TMD - 2

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GS-4 *American Freedom and SP Lines*

The Kato GS-4 is back with a new "as built" design! When the GS-4 was first designed, the train numberboards were placed up at the front of the boiler - a detail that was changed in later years and moved to the middle of the boiler as feature represented on previous GS-4 models from Kato.

Item #	Description	MSRP
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106-094	N Southern Pacific "Morning Daylight" GS-4 w/ ten	$299

The new run of GS-4 locomotives features forward mounted cross bucket boards, with the American Freedom boards a decent run with prototypical "stacked-out" side rods and white rimmed drivers.

The Southern Pacific Sunset GS-4 in Daylight colors makes a perfect companion to the "Morning Daylight" Passenger Train Set.

New Release! N GE C44-9W BNSF "Heritage II" and "Warbonnet"

A new run of GE C44-9W Locomotives in BNSF paint scheme is now available at your local hobby store! Add a new "Warbonnet" road number to your fleet or enjoy the newly re-introduced "Heritage II" C44-9W with BNSF specific cab detailing, pre-installed detail parts, and working, ditch mounted ditch lights, and Kato's always-reliable DCC 9-handle mechanism.

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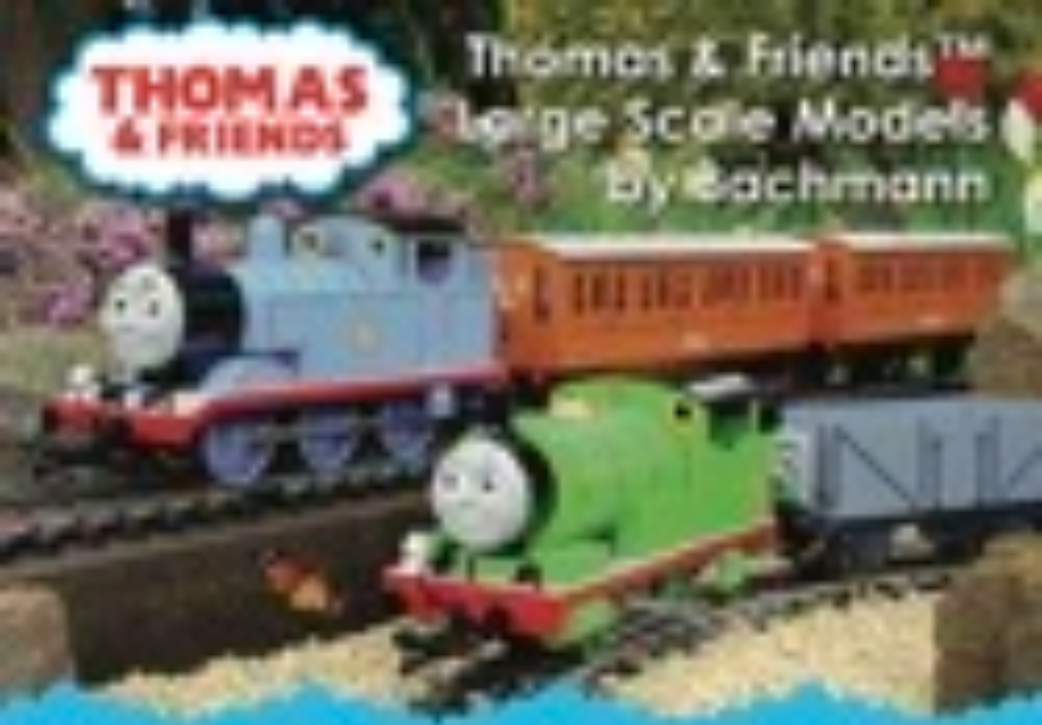

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In 1904, Climax Locomotive Works delivered one of its Class "C" 70-ton shay-truck locomotives to the Moore-Kappel Company to work in its lumber mill in Elkhaven, West Virginia. Backwoods's new HO version of the Climax is based on the Moore prototype currently being restored by the Mountain State Railroad and Logging Historical Association in Cass, West Virginia. This Moore is Mint with a sharp-sounding NMRA-compliant decoder with 8-pin plug, all-wheel electrical pickup, and incredible fine-scale detailing. Hobby until run. The DCC sound-equipped Climax is further enhanced with Soundtraxx® Tsunami® consistently realistic, high quality, hi-fi sound technology while the DCC-equipped version offers speed, direction, and lighting control. Visit your local hobby retailer to see all of our feature-packed Climax locomotives and why the Moore-Kappel #4 Co. #4 is Mint!

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Item No. 83939	Cass Scenic RR #9
Item No. 83940	Clear Lake Lumber Co. #14
Item No. 83941	Climax #3 (Announcement)

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Replacing the missing scenery ingredient

Last night I looked up the recipe for Lou Kosel's scenery "goop" in his book Basic Projects for Model Railroaders. I found the goop recipe contains Permascenic, a product that's no longer available. What does Lou recommend as a replacement for this missing ingredient?
Doug Carter, Toronto, Ontario, Canada

Lou Kosel's New England style scenery is well known for its realism, and one of the contributing factors to this realism is his use of a homemade "dirt" material he calls "ground goop". It essentially lets him mix field gauge as an earth-colored base underneath his ground-texturing materials. Working with a wood spatula, Lou also works goop into any gaps where structure foundations don't make full contact with the terrain and to blend small areas into the scenery.

I found a modified recipe for "ground goop" that first appeared in Lou's article "How to make better scenery," published in the November 1995 issue (Kalmbach Lou has replaced Permascenic with no. 1 sanded tile grout (available at home improvement centers). Be sure to check the packaging, since some noncadmium pigments make the dark yellow-ocher tones unavailable. Lou's technique for using ground goop can also be found on his chapter on groundwork in his book Basic Scenery (in Model Railroader's Guidebook Pub. Library # 12). — Jim Hediger, associate editor

Ground goop recipe

- ☐ 1 part Rubber Cal-Ex (or instant paper mache' product sold by Dick Blick Art Materials, Item# 00000-1004)
- ☐ 1 part vermiculite (a soil additive that's sold by garden stores) to replace the Permascenic
- ☐ 1 part earth-colored flat latex paint
- ☐ ¼ part Elmer's white glue
- ☐ Water, add sufficient water to make the mixture spreadable

Note: Lou also adds a little liquid Lysol to inhibit mold growth during long-term storage to an on-layout. Rubbermaid containers

Ground goop is the homemade filler material that Lou Kosel uses to blend the structures and details into his layout scenery. He used it to blend in this kitchen portal and to provide a base color for the surrounding soil textures. Lou Kosel photo

Suydam mudboard kits

I'm looking for help building some heavy mudboard building kits that I recently acquired. I'm new to the hobby and just don't know much about how to build the structures. The kits that I have are made by Suydam. Do they still make them? If not, where can I find instructions for building them?
Ken Rudolph, Kure Beach, North Carolina

The Suydam mudboard kits were introduced more than 60 years ago and have remained popular ever since. They're still available from Adams Hobby Supply (www.adamshobbysupply.com) in Wildwood, New Jersey.

As a result, the original manufacturer's instructions were well done, covered all the basic assembly techniques, and offered some helpful painting tips. And as more of today's modeling and weathering techniques can be easily adapted to your older kits.

The key to building mudboard kits is to add plenty of "character" to the basic wood building using the techniques. The most interesting is especially important is the common siding, the edges of the walls, and supporting the roof. Before you install the window glazing, it's also a good idea to paint the building trim and sheet and all of the mudboard and wood surfaces (inside and out) with a glaze coat of clear flat finish. This helps the wood and mudboard trees keeping during subsequent changes in humidity.

I built one of the original Suydam Prairie Chicken structures in this manner more than 40 years ago, and its trim and walls have never warped.

Elmer's white glue or "thickened wood glue will be a good bit of assembling these models. You'll also find a small supply of miniature clamps and rubber bands will come in handy to hold walls securely until the glue hardens. — Jim

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WORKSHOPTIPS

Expanded test fixture

I made an inspection fixture similar to the one featured in Jon Hartigan's October 2018 "Workshop Tip." However, my fixture is a bit longer so I could add a feature on the inside of the coupler pocket to help support the coupler.

When I need to set a coupler that requires shims on a platform-mount operating car, I couple two cars together and manually lower them across the magnet to verify the coupler's height operation. Then I test the delayed uncoupling action to confirm that the coupler will not couple past stall for the delayed position or it can be pushed too hard (actions on the bench). — Geoff Chatterton, Everett, Wash.

Foam board colors

There is one thing I've been using extruded foam board for for scenery. Most articles on the topic also discuss. Pink is the Most Used. Blue is another relatively good foam board option as far as color, and have a few shelves for carving and shaping. Then the white foam board available in my area. Which one I purchase has pink foam insulation board?

Chester Curtis, Hyde Island, Fla.

The color of the extruded foam is [illegible] board manufacturers [illegible] made the product. Yes I'm sorry [illegible] by of the colors [illegible] the blues (for light blue foam board) color is copyrighted by Dow Chemical, and the pink foam board color is a registered trademark of Owens Corning. I'm sure your local brand [illegible] a number of other colors, but they were in the lower quality [illegible].

In a bad weather [illegible] the blue or pink insulation board or sheet. Both [illegible] large home center stores. But in certain climates, where there's low-demand for insulation products, you may have to special order the foam boards, or contact the manufacturers to find a local distributor. — Ed.

Workshop Tips and are $25 for additional tips. Send your modeling and layout-building questions and ideas to: Workshop Tips, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail workshop@kalmbach.com. We regret we can't answer all the questions we receive. There is no payment for questions we use and no space reservations.

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Two auto parts boxcars to be released

[illegible] will be releasing two 40-foot auto parts boxcars. According to the company, these boxcars will have improved molded plastic bodies and underframe details, operating trucks complete with separately applied wheelsets and couplers, and gear ratio between 2.5 and 3.0. The first group of cars will be ATSF 50' single-door and 100-ton 2-bay hoppers. The cars are to arrive in the third quarter of 2011.

The Gun Smoke will be the Burlington Northern. It will be available in three road numbers, as a single car (#78000) and a 2-pack (#78001). Also part of the Burlington Northern group will be a single door auto parts boxcar. This car was built by Pullman Standard for Evans in 1967. The prototype for this door other BN acquired the Evans door decades ago. They joined other all-steel cars in the BN fleet numbered from 17 thru 21.

We received a preliminary Excel Preview file [illegible] available in three road numbers in a single car (#78100) or a 2-pack (#78101). Grand Trunk Western received their [illegible] from northern Pullman Standard in the summer of 1967. The new [illegible] adopted in "Big Mixed Grid Road" [illegible] to improve in the deterioration of the wagons by [illegible] Intermodal, their cars were assigned for loading on the GTW. In [illegible] the addition of the [illegible] plans to other cars in construction.

[illegible]

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BY BILL THOMAS

Jacques of all trades

A French company that provides water services and waste removal might also operate your trains

Although Veolia lost its Riverside contract to Amtrak in July 2015, it retains its California presence with this Sprinter light rail line in northern San Diego County.

What company with

Veolia's history

Veolia's contracts

Around the Bay area with no car

Do you know the way from San José? Yes, you can reach downtown San Francisco by rail.

BY BOB JOHNSTON

Amtrak's improvement wish list

First year of a three-year, long-distance study concludes with ideas for big (and little) changes

The Amtrak Chicago–New York Cardinal (southbound at Rockville, Va., Jan. 19, 2007) could gain more riders with daily service. Richard Jones

Sunrise Amtrak's Help train was coming to an end. We had explored two scenic days as a crowd (with a fabulous air conditioner) on the California Zephyr from Ogden, Utah, to Chicago. We then took the Capitol Limited to Pittsburgh, where he hopped off train #30 to meet the Joint Steering and Board for overseeing major Amtrak-freight meeting just across the platform.

"Unfortunately, we were told the unthinkable was not much on the horizon," he'd remarked as a visitor to Amtrak onboard with Trains, a complaining a one-trip customer service. "Why is it necessary? Where would to serve real people with mobility problems as walk a half mile to the terminal and then 40 minutes later trudge back to a train that's already there, waiting, and 15 feet away? We kept wishing meeting for someone a month's normal, emptiness, shocked us about the group of seven consuming members to board the Pennsylvanian's evening departure.

Maybe help will soon be on the way. Amtrak spent a year studying ways to improve the two overnight trains it runs alone, along with the Cardinal, Texas Eagle, and Sunset Limited, and released the results at their quarterly board meeting in Washington, D.C., on Jan. 19. The documents can be viewed at www.trains.com/amtrak. The studies were mandated by Congress in the 2008 reauthorization, the Passenger Rail Investment and Improvement Act. Three years and $5 million were budgeted to study 2,000 routes from Amtrak's 40 long-distance trains (plus shorter routes). Amtrak's Board of Directors was ultimately sign off on any changes, and the lack of available equipment could be a significant impediment to implementation. But the plans provide the first framework in the company's 39-year history for systematically evaluating its product.

Like the Texas Eagle service is at the top of the improvement list for the Amtrak's Chicago–New York–Portland. The passenger train has a viable transportation option offered

Proposed Capitol Limited improvements

Train	Significant highlights	Other additions
Capitol	Extend to Los Angeles to take advantage of Pacific Surfliner equipment and crew; add 30 minutes to schedule	Add checked baggage service; create one-seat ride options between Chicago and Los Angeles
Capitol Limited Pennsylvanian	Create a single train with separate sections for Pittsburgh and Chicago; shorten Pittsburgh–Chicago run	Add sleeper cars to Pennsylvanian; add diner and lounge cars to Pittsburgh–Chicago section
Sunset Limited/Texas Eagle	Operate Eagle as a daily train to Houston; create Sunset Limited as daily service between New Orleans and Los Angeles	Restore connection with Coast Starlight; create a single train with a Portland–San Antonio–Houston section
Lakeside Limited	Add Chicago–Milwaukee–Detroit–Toronto train service	Create new service between Pacific Northwest and Chicago

The southbound Capitol Limited, carrying through mail and express cars, descends the Allegheny Mountains in Pennsylvania at Falls Creek Tunnel in October 1949. [illegible]

>> Amtrak's 2010 ridership and revenue soar

In fiscal year 2010 ridership hugh 30, 2010, Amtrak set an all-time ridership record of 28,719,851, and earned a record $1.79 billion in revenue. The ridership figure broke the previous record, achieved in 2009, by a mere 490 passengers. For FY 2010 the company earned about $8 million more in ticket revenue than 2009. Both 2010 figures show huge gains over recession-plagued 2009. Long-distance trains and state-supported corridor services picked up the slack for weakened Northeast Corridor demand and pricing pressure in 2010. Two short-distance numbers were bolstered by new Piedmont (North Carolina) trainsets to Tennessee in FY, and Lynchburg, Va. trains. Excluding these services, the biggest 2010 percentage gainers were Acela Express (up 9.8 percent in ridership and 7.7 percent in revenue), Missouri River Runner (14.4 percent/24.4 percent), Hiawatha (16.5 percent/19.1 percent), Empire Limited (19.8 percent/25.4 percent), and City of New Orleans (10.8 percent/15.8 percent). Amtrak's large revenue gains were driven by higher coach and sleeping car fares. For a complete ridership trend analysis, see www.trainsmag.com. [illegible]

Top-ten Total revenue and ridership comparison

Fiscal year	Ridership (millions)				Revenue ($ millions)			
	Total	Increase	Rank in 2010	Long-distance	Total	Increase	Rank in 2010	Long-distance
2010	28.7	0.8	1	4.7	$1,794	$80	1	$666
2009	27.9	0.5	2	4.6	$1,714	$46	2	$643
2008	27.4	0.6	3	4.5	$1,668	$82	3	$615
2007	26.8	0.4	4	4.4	$1,586	$76	4	$594

Data: Total, Top 10, and 2010 ridership, FY 2010 Budget Request; 2010 revenue, Amtrak

Fulbright, an Empire Builder dancer had cast by Americus Express would make a fine addition to the Carolinas [illegible]

Diesels only a mother could love

Beauty is only skin deep. For these eight models, that's a good thing.

"Crandall Cab" B units (sold separate) Chicago & North Western played most crucial role in its plans when it converted the cabless former Union Pacific E9Bs and E9Cs into A units for its Chicago area commuter service in 1973. C&NW turned these conversions after the company's superintendent of motive power, Milton H. Crandall,

1980's LRC's. The first air-use train to market a riding passenger market by making this will look like a train to

Four 3rd Renovation's "Quartettaxe" Common across Europe. Has exterior was an unsuccessful attempt to introduce a lightweight design to the U.S.

Morrison-Knudsen's EMD/FM C. Looking like the smashing hybrid of spare parts using a GP60 cab and nose grafted onto the road part of an F40. Boxy lines admittedly carried their weight; all Big Mountain's commuter operations, and

Nokia built Southern Pacific Los Valley E-500 was an Japanese creation that won the spotlight for creative construction. A mix on the border frame of a former Rio Grande F-45-C (Electro-Motive Type, Dash 9-44 but

Kadee N-G GP7. EMD GP will go down in history for making ugly drawings from models by extending GP7's to Bay (GP9s. Kadee Fix moved the F unit industry, an did anyone about them.

GE's BQ23-7. Dedicated travel (Jan Amtrak hit of those boxy units to put the cretin train crew on the engine and how the cabooses. Maintenance "Hamsterheaded" and "BIGOS modeling"

GE's P40s and P42s. Designed "Genes" Amtrak's ultimate this engine's modern look came from a need for more crew protection and operation in the infamous mothballed Northeast.

For LS&I, a new look

New LSI Group SD40-2(W)s pull oncoming train on joint login Mile Junction, Mich., on Sept. 26, 2015.

Katy "Heritage unit" repaired at Reico

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A LIVE LO THIS SEASON A recent donation of a custom-built 16 x 34-foot O gauge hi-rail model railroad is a major new attraction at the Twin City Model Railroad Museum in St. Paul, Minn. (www.tcmrm.org). The museum is housed in the century-old former Como workshops of the Great Northern RR in St. Paul and is home to 13 different operating model and toy train layouts. The newly added railroad has a Milwaukee Road theme and was built by Gardiner Studios of Pottersville, N.Y. The non-profit museum is an entirely volunteer-run operation, relying on paid staff on as-liked of the layouts on display were either donated or constructed using wholly donated materials. Visit tcmrm.org for more information. Photo by Bill Shelton

A TASTY TANKER The Southwestern Division of the Toy Train Operating Society and the Hot Tail Division of the Train Collectors Association are offering custom-run Lionel O-gauge post-American Flyer 2-gauge Boston Hunt refrigerator tank cars. This is the fourth in a series of five Lionel Standard gauge cars, discussed in previous issues, numbering. The O gauge car costs $60 ($5 plus $10 shipping; add $6.04 sales tax for delivery within California). The S gauge car costs $64.95 plus $10 shipping; add $6.24 sales tax for California deliveries. Non-resident U.S. and overseas shipping is $16. Order deadline is March 31, 2011, with deliveries expected in November 2011. Check payable to TCM SW Div or international money order only. Contact Brian Lawson, 8818 Dunmore Ave., Woodland Hills, CA 91367-5818 or visit rail.stanson.org/products.html

A BOOK IT A train-registers doorstop, loves by Philip Hoose and illustrated by Sebastian Quigley is a silky children's book taking a casual walk through the history of railroading. It uses text, die-cuts, full-page photos, and cut-through panels no good and fund the young reader's attention. The 32-page book, which a publishing by Knopf/Alfred A. Knopf of Random House, costs $16.99. See your book retailer or order online at amazon.com or barnesandnoble.com

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LIMITED-EDITION TIME LINES. Ready Made Trains by Artists Craft offers the no. 8677 H Bethlehem Steel ore car set. The two-D gauge cars have different road numbers and markings for the Philadelphia, Bethlehem, and New England Railroad, a Bethlehem Steel line. Each run features a removable ore load and the cars ramp molds and couplers. The set costs $78.95. See your hobby retailer or go to readymadetrains.com to order.

ESSENTIAL LIFTER. Bachmann's rolling contribution to construction scenes, the Kohler-Ajax plant loader. This 1:20 scale die-cast metal model features 360-degree rotation, working cable reel and hook block, a motor access door, and a boom that extends 7 inches. The model measures 11 inches long, and 11½ inches high and is priced at $70.95. Get your die cast model retailer or order from bachmann.com.

HOLIDAY ARCHIVES. Angela Trotta Thomas evokes Christmas past and present with her latest work, Christmas Switchboy. The 16 × 24 oil and giclee print is offered in a limited edition of 100 prints and 15 artist's proofs. The print costs $40 plus $10 shipping (Pennsylvania residents add 6 percent sales tax). Order from Angela Trotta Thomas, 361 South St., Old Forge, PA 18518; call 570-574-9882; or go to angelatrottathomas.com.

GIFT FOR YOUTH. K&E Trains Restoration has released a simple way to run real to gauge cars and gas trains on O or Standard gauge track – the K&E Track Runner. The device is made with grooves to accommodate the two track sizes. A magnet is embedded in the base to open magnetic couplers to facilitate car making. The ramp costs $15 plus $6 shipping. Order from K&E Train Restoration, 117 Vine St., Watertown, NY 13601; call (315) 869-4343; or email K&Erestoration@msn.com.

HOLIDAY CHECKLIST. The Books & Digital Components that 2011 edition of the Lionel Illustrated Price and Rarity Guide (1901-1969). The volume covers pre- and postwar trains in O, Standard gauge, and S, OO, and HO gauges. The book costs $24.95. See your hobby retailer or go to kalmbach.com to order.

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No matter where you are on a toy train evolution, there are always questions. Is there a better way to build a mountain? What's manufactured with hard power wire ties out? Downloads for this operation, anything with electricity and scenery, posters for the collector and history buff. Look for them in our Things on the Home page.

Online forums
Digital spiked that Classic only talk, our forum has been upgraded to allow you to create a detailed profile and interact with fellow toy train fans. Why wait? It's free and join today!

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Focus On Classics
Hosted by Senior Editor Roger Carp, this section explores the classic toys of the Fifties & Sixties.

Fix a screw post on a Lionel tender

YES, YOU CAN USE TAPE

Broken screw posts don't need to signal an end to using a damaged tender.

I recall an article in Classic Toy Trains on repairing the screw posts on a Lionel postwar tender using a wide screw and some kind of filler. I can't find the issue. Can you tell me what issue it was in? – Alan Allen, Hickory, N.C.

After a bit of hand play and rough shunting, many postwar Lionel sheet-plastic screw posts will break off at the base. While I don't recall CTT ever running a piece about this, we have had problem experiences using soldering tools for the job.

Apply the tape (or tapes) to the corresponding diagonal screws on the broken post so that it's centered on the one that stuck. Press it in place firmly, but leave space where the broken post will be attached to the screws.

Fill the empty space with common wood toothpick squirt and allow it to harden completely — 24 hr. or — for a couple of days minimum.

Remove the tape and make sure the repair has bonded well enough to the plastic post.

If it has, the repair can be drilled, tapped, and filled solid. If not, replace the screw/new post & bolt.

If you are lucky, you can paint the post like it hadn't just happened. We wrote about this repair in CTT #[illegible] and have had success with it on a number of occasions. Some have lasted for years. Others have failed within a few months. Sometimes it's just a matter of how much stress is put on the post. Overall, it's a good repair to have in your bag of tricks.

Broken springs on Lionel couplers

Where do you repair broken springs in coupler knuckles couplers? I have the operation idea, but would like to know how to do it right. Where can I buy new springs and rivets? – Thomas Johnson, Knoxville, Conn.

Just about all Lionel post-World War II era couplers, as well as many prewar models, have springs and rivets that will need replacement at some point. Fortunately, new springs and rivets are available from Lionel Service (800-833-7300). Be sure to specify the correct spring for the coupler you're working on. Some have subtle differences.

Replacing the springs and rivets is a good idea when you're doing a complete overhaul of a locomotive or tender. Just be careful not to lose the springs when you're working on the coupler. Use a small screwdriver to pry the rivet out. Then remove the spring and replace it with a new one. Be careful not to bend the spring when you're installing it. Use a small screwdriver to push the rivet back in place.

Tough to remove paint

I recently picked up a Lionel 2-gauge switcher set. The orange model was missing the gear. Can I clean and restore the motor? There's still a broken piece of the old gear part stuck in the hole! Have to remove before installing a replacement one. I've tried a hammer and punch and a needlefile trick, but the hole won't come out. What do you recommend? – Richard Hinton, Antioch, Minn.

A Fortunately, this is an easy fix. The piece of sprocket is most likely a worm gear. If it is, it's a simple matter to remove the broken piece with a small screwdriver. Some hobby supply stores carry replacement worm gears. Another option is to replace the entire motor with a new one. Lionel Service (800-833-7300) has a wide variety of motors available. Some hobby supply stores carry replacement worm gears. Another option is to replace the entire motor with a new one. Lionel Service (800-833-7300) has a wide variety of motors available.

S&W PARTS SUPPLY

PLEASE!

QUESTIONS ANSWERS

1911 early issues

I have almost every issue of Classic Toy Trains from Big Pictures issue #98 1911. I would like to know how many issues were published a couple of the early years of CTT, in which months, and how were the volume numbers assigned. Thomas Cusick, Lenox, Mich.

Here is a month-by-month breakdown of the volume numbers, first + issue #1 (Summer '91) through Vol. 5 #12 (Spring '96), Vol. 6 #1 (Summer '96) through Vol. 10 #12 (Spring '01), Vol. 11 #1 (Summer '01) through Vol. 15 #12 (Spring '06), Vol. 16 #1 (Summer '06) through Vol. 20 #12 (Spring '11), Vol. 21 #1 (Summer '11) through Vol. 25 #12 (Spring '16), Vol. 26 #1 (Summer '16) through Vol. 30 #12 (Spring '21), Vol. 31 #1 (Summer '21) through Vol. 35 #12 (Spring '26), Vol. 36 #1 (Summer '26) through Vol. 40 #12 (Spring '31), Vol. 41 #1 (Summer '31) through Vol. 45 #12 (Spring '36), Vol. 46 #1 (Summer '36) through Vol. 50 #12 (Spring '41), Vol. 51 #1 (Summer '41) through Vol. 55 #12 (Spring '46), Vol. 56 #1 (Summer '46) through Vol. 60 #12 (Spring '51), Vol. 61 #1 (Summer '51) through Vol. 65 #12 (Spring '56), Vol. 66 #1 (Summer '56) through Vol. 70 #12 (Spring '61), Vol. 71 #1 (Summer '61) through Vol. 75 #12 (Spring '66), Vol. 76 #1 (Summer '66) through Vol. 80 #12 (Spring '71), Vol. 81 #1 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Use rack thatch cover finger rip to replace light bulbs socketed in light spaces

Get a grip on it, man!

RUBBER FINGERS MAKE IT EASIER TO REPLACE CLOSE BULBS

While I was prepping several interior car (floor console control switches for installation on my 4-gauge Stereo Channel that many had incandescent light bulbs. These bulbs can be a challenge in tighter, especially when inserting my aging fingers in small or hard-to-reach spaces.

I once removed one a using a piece of electric tubing to help install a light bulb in the back of a pickup passenger car, but I didn't have a piece of tubing that would fit the socket bulb. Instead I used a "rubber fingers," a inexpensive product that makes it easier to replace paper thin materials.

To make the finger more useful for my applications, I used a pair of scissors to cut off the cot tip of the finger, creating a rubber finger that I could use to grip the bulb and remove it from the fixture.

John Lyon Bulb
Glasgow, KY

A touch of protection

When the time came to add a touch to my layout, I purchased a large bag of grommet up a rock from the hot rod car or dashboard to a radio. Before that, you should consider that dashboard shadows. I decided to cover some of the shadows I already had on hand.

When required, marked, and then cutted down the diagonal line and small openings and the clear plastic construction make it easy to work and apply all varieties of these products.

To apply the three most common shapes, smaller bottles that are often used to cover spots and openings, I used the applicator grommet from products. Patented chrome components work well. But for even larger grommet covering materials, I'm using standard chrome components with slight larger holes in the bottom cap.

Ron Hudson
Lexington, Ohio

Warm feelings

WINTER IS NOT SO BAD WHEN YOU HAVE TOY TRAINS

Here we are in another mixed season. I like to remind those who, and let me tell you that you can get into subways in the Northeast from

I enjoy the changes each season brings, but I really love those moments in the first weeks by piloting with my trains. That is the time of year when the days become shorter and the nights last an extra hour. Temperatures become a bit colder, and those of us living in the Northeast can't help but get down to more things indoors.

Of all those indoor activities, little is more to check train layouts, where their trains circuits are usually located. I love I think there's something about hearing trains rolling in over time more on a normal indoor night and getting lost in my HO or S gauge world. Hot cocoa or cup of coffee in the close-by is a great way for a most pleasant evening spent "working" on trains or adding accessories to my layout.

Of course, the crown jewel of my empire is the holiday season that comes right after Thanksgiving and lasts through the opening of the new year. Every year I can remember the moment holiday season has commenced when I turn on the train switch. People pay admission to see my trains at all sizes and it becomes a fun event together.

Many visitors point to the mountain landscape of holidays past as they fly along the trackside scenes as "it reminds me of my childhood." Many times I can also be found on the train room with those commissioned to work a locomotive.

So for lovers who love it is always for a few more to come visit who love I have been trains to take refuge as we await the longer, colder winter nights. The warm feelings we get are kind of cozy, where the cold seasons give us glimpse of time, when outdoor chores are put to a long-term storage.

I enjoy reading and researching the train seasons that I gather during the year. The compelling old issues of *Classic Toy Trains*, as well as other entertainment articles. There are volumes of printed texts that are inspiration to use to my wife. I'm relishing in my train room.

It is also the time of the year when I look back and reflect on what I am going on the run more months. Reading being a kind-hearted hobbyist. I see the concern of a lot more years, so I get a good idea of what is happening. For me, 2009 has been an interesting one in my train hobby.

The economy is known as a strange fact I will run a lot of us to avoid storage trains being brought and sold.

I don't understand that it is not going to produce the [illegible] purchase one bigger. I forgo materials after completed [illegible] production. That has had a lot of very active and successful [illegible] to train fans to train, right after World War II, became 40 or so can train fans hobbyists are attracted to the hobby. The 8 to serving many world-record goes getting into the hobby. Then is looking for a good historic train scenes, and trains are a good for the years, pretty colorful trains.

I'm running that one to the room and I believe this trend will continue at least for the next 10 years.

We still have to act, what the one new heritage, although I have one thing that a train for me — it gets me out of from retreats! I know I said I love the winter months, but I usually spend many to how many of Arkansas to Florida to train me and get myself for spring and the light train show in York. For there the train begins again.

Happy holidays from the Palmetto house and the Lionel Model Railroad Division and keep your train

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Price	£49,995	£61,995	£59,995
Engine	3.5 V6	3.6 V6	3.0 V6
Power	302bhp	380bhp	333bhp
Torque	258lb ft @ 4,800rpm	324lb ft @ 5,250rpm	324lb ft @ 3,000rpm
Gearbox	7-speed auto	8-speed auto	8-speed auto
Kerb weight	1,875kg	1,960kg	2,045kg
Fuel economy	34.9mpg	32.5mpg	32.5mpg
CO2 emissions	189g/km	203g/km	203g/km
Top speed	155mph	155mph	155mph
0-62mph	6.5sec	5.9sec	6.7sec
Fuel tank capacity	70 litres	100 litres	100 litres
Max payload	460kg	540kg	540kg
Towing capacity	1,500kg	2,400kg	2,400kg
Length	4,815mm	4,926mm	4,926mm
Width	1,845mm	1,939mm	1,939mm
Height	1,465mm	1,705mm	1,705mm
Wheelbase	2,850mm	2,895mm	2,895mm
Turning circle	11.4m	12.2m	12.2m
Boot capacity	330 litres	670 litres	670 litres
Warranty	3 years/60,000 miles	3 years/60,000 miles	3 years/60,000 miles
Insurance group	50	50	50
Road tax	£210 per year	£210 per year	£210 per year
Service intervals	12,000 miles	12,000 miles	12,000 miles
Key options	Sat nav, leather, xenon lights, heated seats, rear parking sensors	Sat nav, leather, xenon lights, heated seats, rear parking sensors	Sat nav, leather, xenon lights, heated seats, rear parking sensors
Colour	Graphite	Black Obsidian	Black
Trim	Luxury spec	Executive	Executive

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Diesels in Thailand

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Table

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Environment Councillor shows some useful techniques for improving/constructing ornamental structure that many could photograph. Up the author

A small brick shed

Part 1 – preparation and initial assembly

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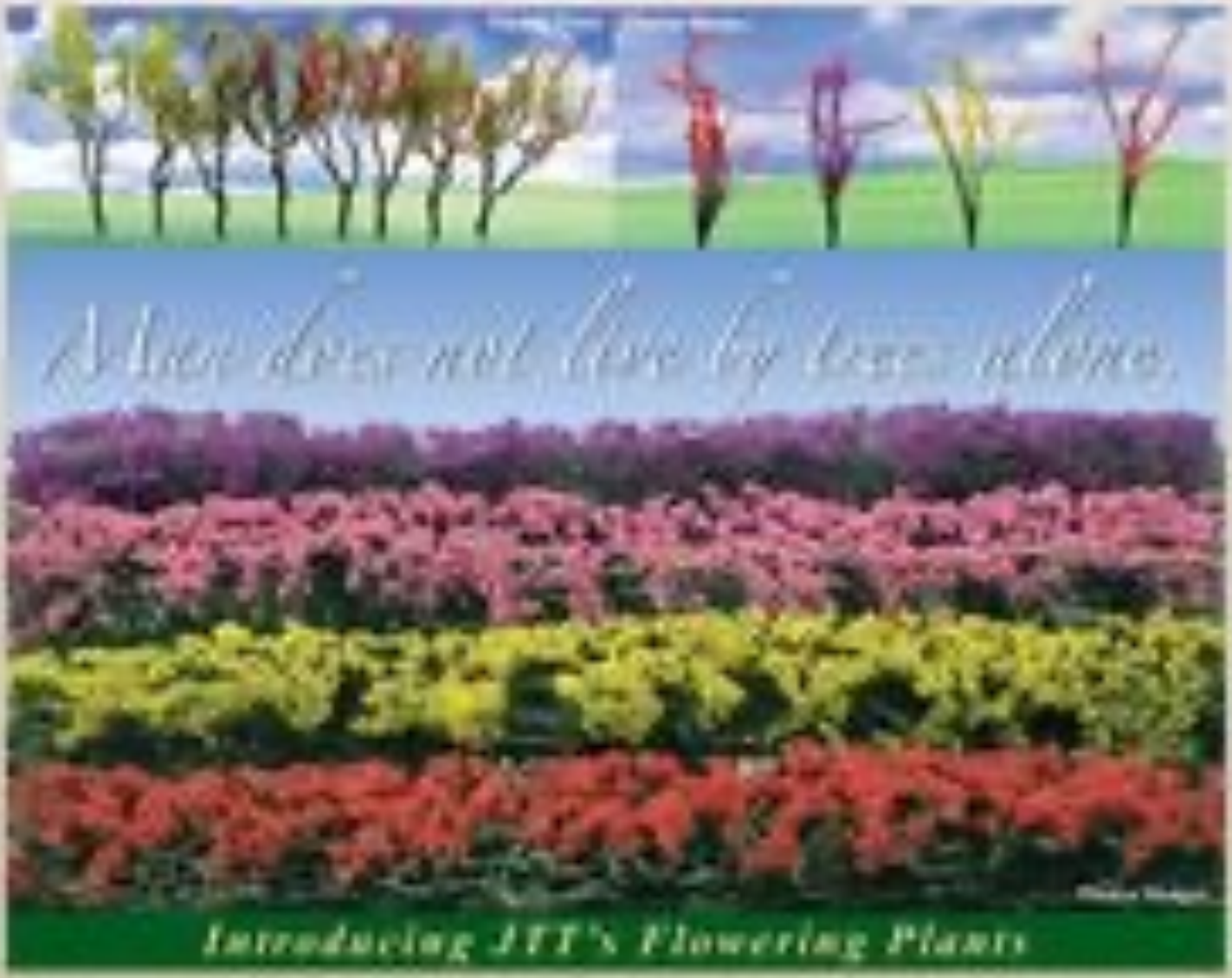

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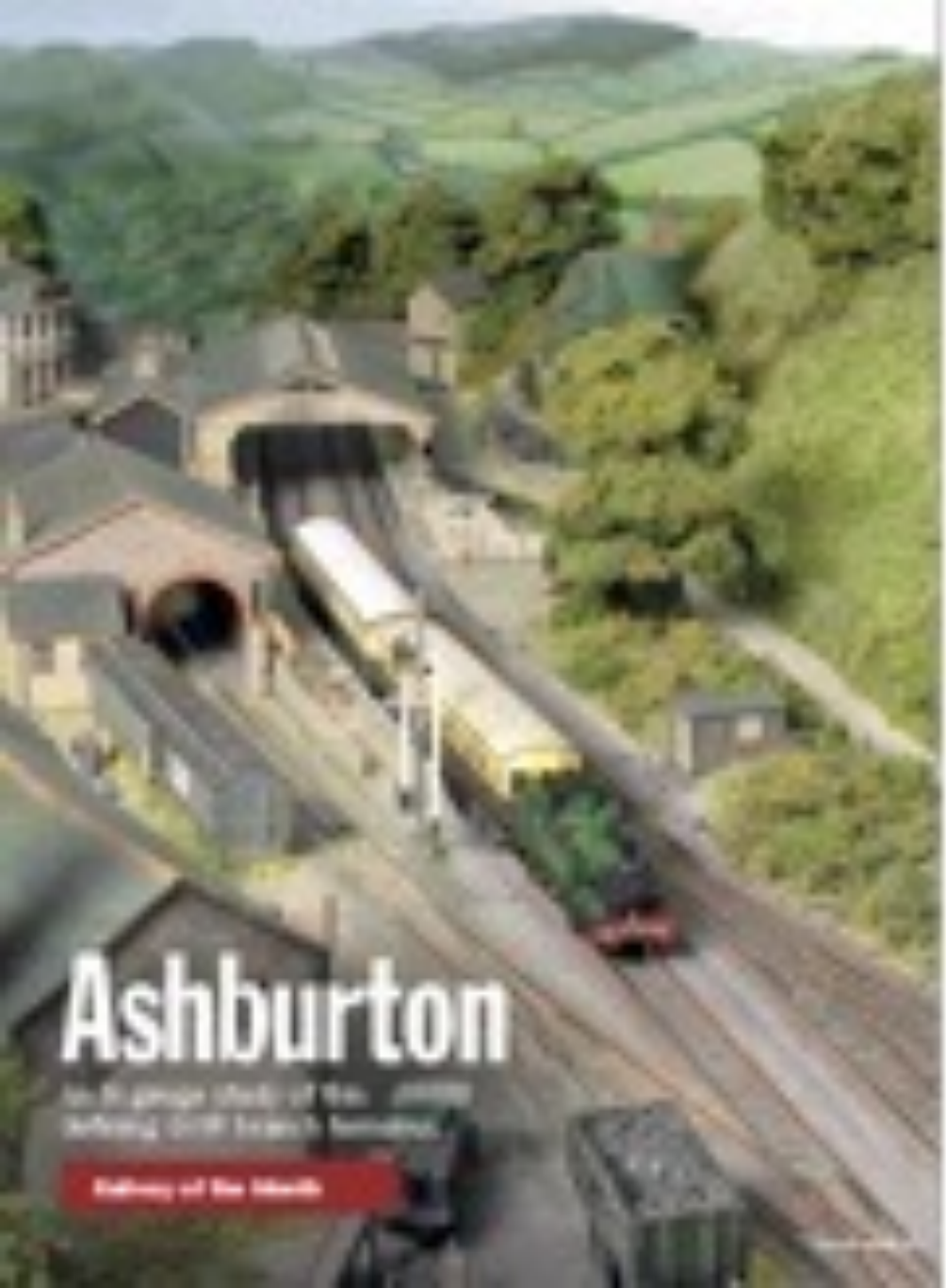

Ashburton

Golden Gateway to Alaska

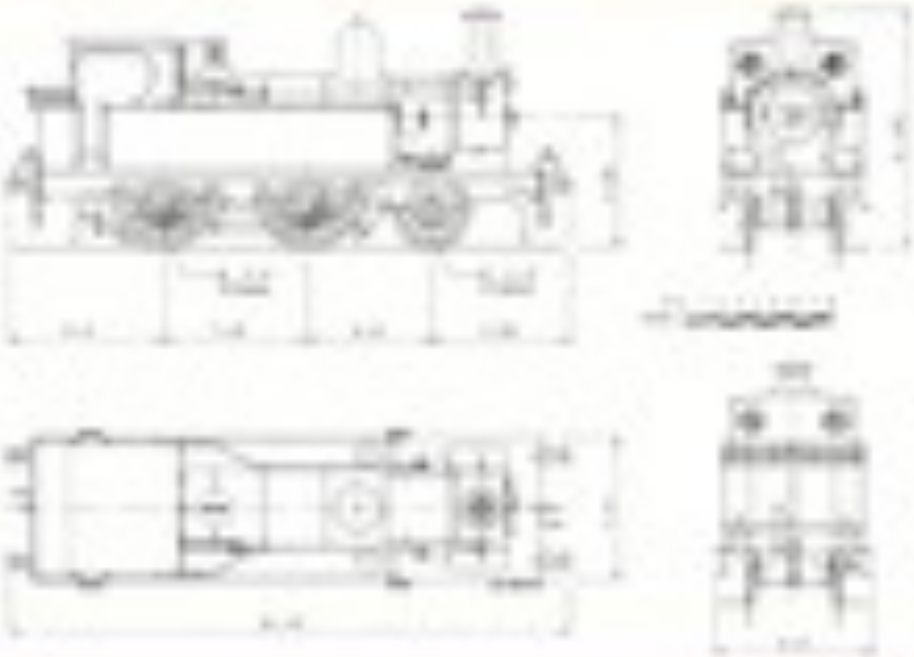
Set for service at Anchorage's station amidst its transportation surroundings, displaying the well-known tensions as both nature and man have intended

Einbettung
Damit die Gleisanlage den Hang nicht zusätzlich belastet, wurde sie auf Stützen aufgeständert. Dadurch entsteht ein Durchblick, der die Illusion einer Brücke unterstützt. Die Stützen sind aus Sperrholz zugeschnitten und mit Holzleisten verkleidet. Die Gleise sind auf Schwellenbändern verlegt, die auf Querträgern aufliegen. Diese sind mit Schrauben an den Stützen befestigt.

Die Böschung wurde mit einem Gemisch aus Gips und Sand modelliert und mit Farbe in mehreren Lagen bemalt. Zum Schluss wurden Grasfasern aufgestreut und mit Klebstoff fixiert.

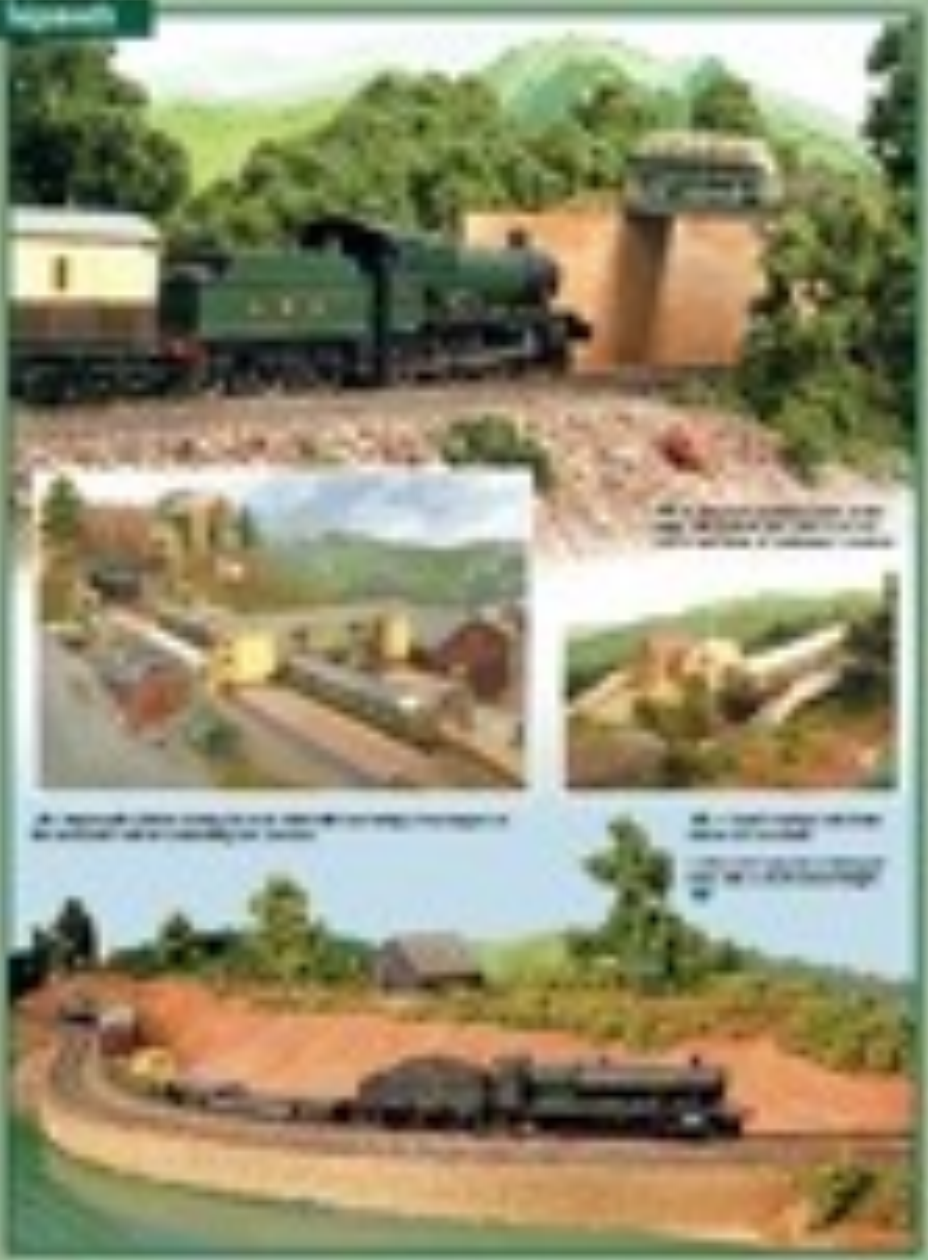
NSR B Class 2-4-0T in 4mm

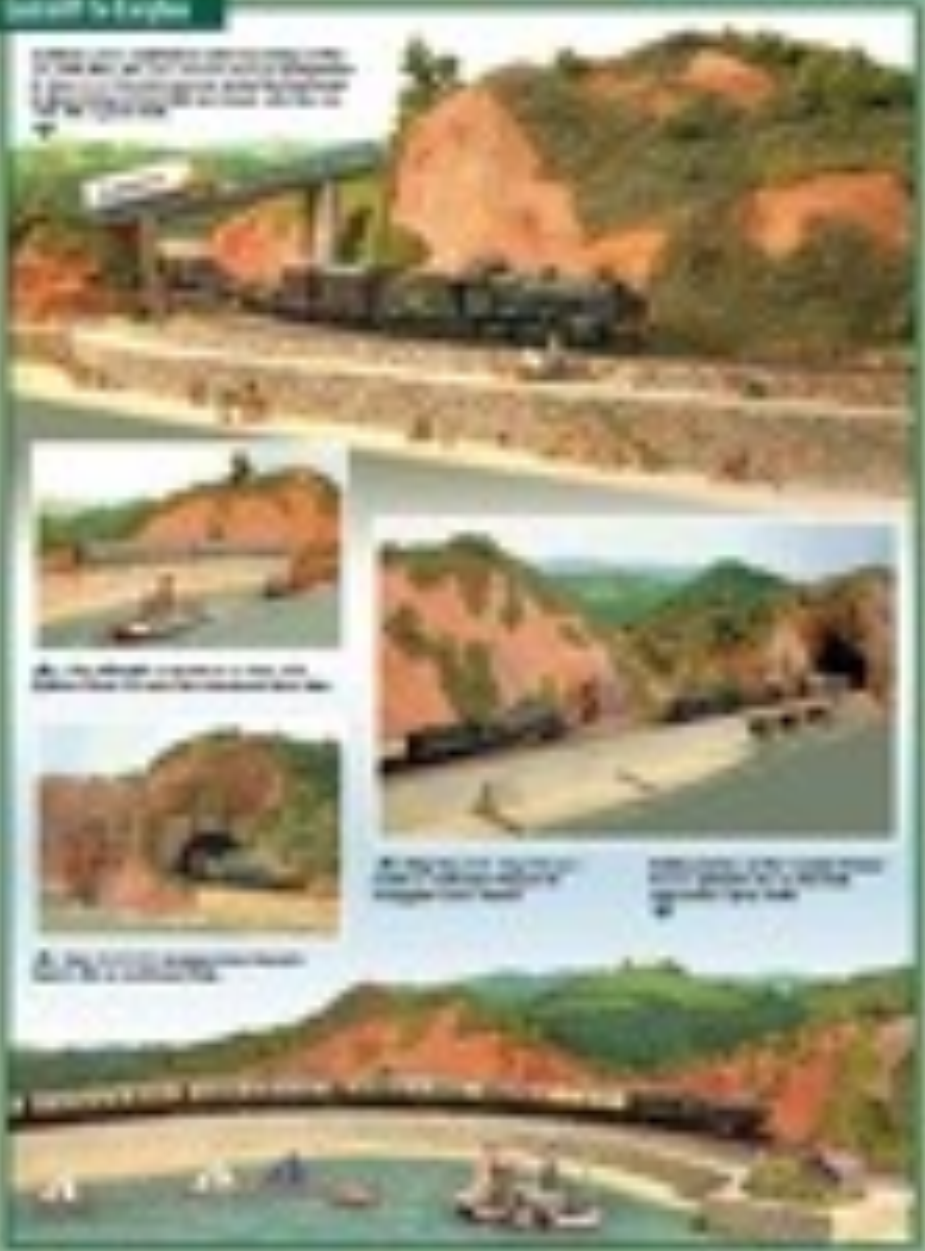
Building the London Road Models etched brass kit



South Devon spectacular

A fabulous stretch of Grt main line train in Australia

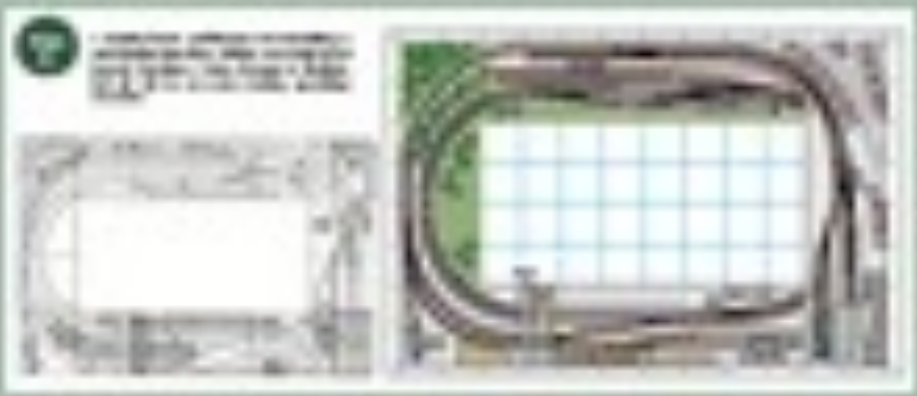




The abiding 6' x 4'

A timeless (!) layout idea adapted for 0 gauge

ROB ROLFE introduces the first of Dave Bamford's classic layout plans to suit 0/7 gauge



Cromer

A homeless to Norfolk, modelled in 00

A Whale in N

Constructing the 76 Gauge Society Gresley Kit

ALAN CHATTERTON describes the kit-to-scale assemblage and construction of the Gresley Quad Articulated Unit for outline scale 4mm/ft

Richings Park

Modelling a Charles Holden-designed London Transport station

Building a fleet of EM1s in 7mm

Part 1 – Creating the etched

Simon Longstaffe

SIMON LONGSTAFFE describes the various stages and considerations associated with the production of a model comprising from artwork to final, a number of electrical etched brass body shells – one for each class in the prototype fleet.

In my article – described by the editor as a 'Masterclass' – which was published in the March 2008 issue of *Model Railway Journal*, I described the process of producing a model of a Class 37 diesel locomotive, using a combination of etched brass and cast white metal components. Although I had built a number of locomotives from kits and scratchbuilt others, I had never attempted to produce my own etched body shells before, and I was keen to do so. I had also decided that I would like to produce a model of a Class 86 electric locomotive, but I knew that I would not be able to produce a model of the class without producing my own etched body shells. Although I had built a number of locomotives from kits and scratchbuilt others, I had never attempted to produce my own etched body shells before, and I was keen to do so. I had also decided that I would like to produce a model of a Class 86 electric locomotive, but I knew that I would not be able to produce a model of the class without producing my own etched body shells.

As I anticipated, I had a lot to learn about the whole process, and there were many problems that I had to overcome before I was satisfied with the finished product. Fortunately, I had the help of a number of friends who were also keen to produce their own etched body shells, and we were able to share our knowledge and experience. Without their help, I would have found the whole process much more difficult, and I would not have been able to produce the models that I have described in this article.

Moore Street TMD—2

Using a custom-designed computerised controller

Figure 1. [illegible]

Figure 2. [illegible]

Fig. 3. [illegible]

Moore Street T40

Feltwell Road

Building a narrow gauge micro-layout

STUART MILES set out to build the overall layout as a way of trying out some ideas before embarking on a larger project, only to find that it became a fascinating project in its own right.

Introduction and construction

Operation

The Inspection Pit

A Horsebox for O gauge

Building the 'shiny' Dapol 9ft 6ft Box Parkside Dundas

Following the prototype feature on the GWR 4575 horsebox in last month's issue, we take a look at building this favourite subject in 7mm. Richard Foster reviews the Dapol kit and shows how to add extra detail

[illegible]

[illegible]

Sea Foam trees for Folkestone East

The need for nondescript lineside trees finds **Nigel Burkin** experimenting with sea foam and coarse turf.

N gauge 37 heaven

Unhappy with the look of his Class 37s, **Tony Buckton** decided to carry out some drastic modifications

F

[illegible]

[illegible]

[illegible]

[illegible]

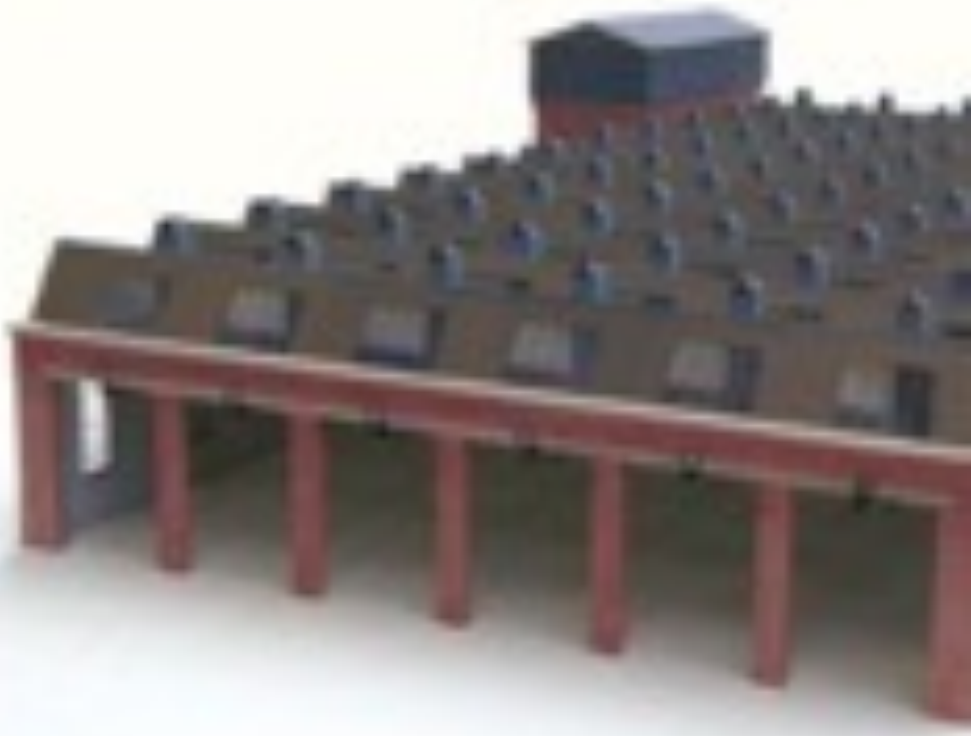
[illegible]

[illegible]

[illegible]

Class 37 No. 37 025 *Loch Rannoch* in Railfreight Distribution livery with a Railfreight Distribution sector logo. Note the Railfreight Distribution sector logo on the cab side. Also note the Railfreight Distribution sector logo on the cab side.

Northlight loco shed



A commission to build a 4mm scale six-road northlight engine shed is described by **Basil Crowther**. Photography by the author.

The Art and Science of Brick Bonding

Brick bonding is the practice of arranging bricks in a pattern to create a strong, stable, and visually appealing wall. The bond pattern determines how the bricks overlap and interlock, distributing the load evenly across the wall. Different bond patterns have been developed over centuries, each with its own characteristics in terms of strength, appearance, and ease of construction.

The most common bond pattern is the stretcher bond, where all the bricks are laid lengthwise, with each course offset by half a brick. This pattern is simple to lay and provides adequate strength for most residential walls. However, it has a relatively low resistance to lateral forces and is not suitable for load-bearing walls in multi-story buildings.

The English bond alternates courses of headers and stretchers, with the headers centered over the joints between the stretchers. This pattern is stronger than the stretcher bond and is commonly used for load-bearing walls. The Flemish bond, which alternates headers and stretchers within each course, is even stronger and more decorative, but it requires more skill to lay and is more time-consuming.

Other bond patterns include the header bond, where all the bricks are laid as headers, and the rat-trap bond, where the bricks are laid on edge to create a cavity wall. Each pattern has its own advantages and disadvantages, and the choice depends on the specific requirements of the project, including the desired appearance, structural needs, and budget.

Mortar plays a crucial role in brick bonding, binding the bricks together and filling the gaps between them. The mortar joint is typically about 10 millimeters thick, and it must be strong enough to support the weight of the bricks above it, but also flexible enough to accommodate slight movements in the wall. Common mortar mixes consist of cement, lime, sand, and water, with the proportions adjusted to suit the specific application.

Proper workmanship is essential for a well-bonded wall. Bricks must be laid plumb and level, with consistent joint thickness throughout. The mason must also ensure that the mortar is properly compacted and tooled to create a weather-resistant finish. Poor workmanship can lead to a variety of problems, including cracking, water penetration, and reduced structural integrity.

Modern construction methods have introduced new challenges and opportunities for brick bonding. Thin brick veneers, for example, are used to clad the exterior of buildings, providing a decorative finish without the need for a full-thickness brick wall. These veneers are typically attached to a backing wall using metal ties or adhesives, and they require careful detailing to prevent water infiltration.

Despite the availability of alternative materials, brick remains a popular choice for its durability, low maintenance, and timeless appeal. Many historic buildings are constructed of brick, and preserving these structures often requires specialized knowledge of traditional bonding patterns and mortar mixes. Restoration projects may involve repointing, which is the process of removing deteriorated mortar and replacing it with new mortar that matches the original in appearance and composition.

Sustainability is also a growing concern in the brick industry. Manufacturers are developing more energy-efficient kilns and exploring the use of recycled materials in brick production. Additionally, the thermal mass of brick walls can help to regulate indoor temperatures, reducing the need for heating and cooling. As architects and builders continue to seek environmentally responsible solutions, brick is likely to remain a relevant and valuable material.

Water Jewels

Water jewels are a form of water feature that combines art and architecture. They are typically made of glass or crystal and are designed to refract and reflect light, creating a dazzling display of color and movement. Water jewels can be found in a variety of settings, from public fountains to private gardens.

The history of water jewels can be traced back to the ancient Roman and Greek civilizations, where they were used to decorate temples and palaces. These early water jewels were often made of marble or other stone and were simple in design. However, as glassmaking techniques improved, more elaborate and colorful water jewels began to appear.

During the Renaissance, water jewels became a popular feature in the gardens of wealthy Europeans. They were often designed by famous artists and architects and were considered a symbol of status and power. Some of the most famous water jewels from this period can still be seen today, such as the Fontana di Trevi in Rome and the Peterhof Palace in Russia.

In the 19th century, water jewels began to be used in public spaces, such as parks and squares. They were also incorporated into the designs of many new buildings, such as hotels and theaters. The use of water jewels in public spaces helped to make them more accessible to the general public and contributed to their popularity.

Today, water jewels are found in a wide variety of settings, from residential gardens to commercial buildings. They are also used in a variety of different ways, such as in fountains, pools, and waterfalls. Water jewels can be made from a variety of materials, including glass, crystal, and metal. They can be designed in a wide range of styles, from traditional to modern.

The design of a water jewel is typically based on the principles of refraction and reflection. When light passes through a transparent material, such as glass or crystal, it is bent or refracted. This bending of light causes the light to be dispersed into its component colors, creating a rainbow effect. The reflection of light off the surface of the water jewel also contributes to the overall display of color and movement.

The size and shape of a water jewel can vary greatly depending on the intended location and purpose. Small water jewels may be designed to be placed on a tabletop or in a small garden, while larger water jewels may be designed to be the centerpiece of a large fountain or pool. The shape of a water jewel can also be varied, with some being simple spheres or cubes and others being more complex and intricate.

The installation of a water jewel can be a complex process, depending on the size and weight of the piece. Small water jewels can usually be installed by a single person, while larger water jewels may require a crane or other heavy equipment. The water jewel must be properly supported and leveled to ensure that it functions correctly and does not pose a safety hazard.

Water jewels require regular maintenance to keep them looking their best. This may include cleaning the water jewel to remove dirt and debris, as well as checking the water level and adding water as needed. In some cases, it may also be necessary to replace the water in the water jewel periodically to prevent the growth of algae and bacteria.

1 Use the table saw to cut the foam board to the required dimensions. Use a metal ruler and a sharp craft knife to score the foam board, then snap it along the scored line.

2 Glue the foam board pieces together to form the basic shape of the building. Use a strong glue that is suitable for foam board, such as UHU Por. Hold the pieces together with masking tape until the glue has dried.

3 Cut the roof pieces from foam board and glue them in place. Add a layer of thin cardboard to the roof to give it a more realistic texture. Use a sharp craft knife to trim the cardboard to the edges of the roof.

4 Use textured wallpaper to cover the walls of the building. Cut the wallpaper to size and glue it in place using a wallpaper paste. Smooth out any bubbles with a wallpaper brush.

5 Add windows and doors to the building. Use pre-made plastic windows and doors, or cut them from thin cardboard. Paint the windows and doors with acrylic paints.

6 Add any additional details to the building, such as guttering, drainpipes, and brickwork. Use thin strips of plastic or cardboard to create these details. Paint the details to match the rest of the building.

Building miniature scenes can be a fun and rewarding hobby, but it can also be challenging to get realistic-looking photographs of your creations. One of the most important factors in creating realistic miniature scenes is lighting. Soft, diffused light is ideal for most miniature scenes, as it helps to create a natural-looking shadow and highlight pattern. Harsh, direct light can create unwanted shadows and highlights that can make your scene look unrealistic.

One way to achieve soft, diffused light is to use a light tent. A light tent is a small, enclosed space that is lined with white fabric or paper. The fabric or paper helps to diffuse the light, creating a soft, even illumination. You can also use a light tent to create different lighting effects, such as backlighting or sidelighting.

Another important factor in creating realistic miniature scenes is the use of depth of field. Depth of field is the area of the image that is in focus. A shallow depth of field can help to create a sense of depth and realism in your miniature scenes. To achieve a shallow depth of field, you will need to use a wide aperture (a low f-stop number) and a long focal length lens.

Finally, it is important to pay attention to the details in your miniature scenes. Small details can help to make your scenes more realistic and believable. For example, you might add a few scattered leaves to the ground, or a small puddle of water. These details can help to create a sense of realism and make your scenes more engaging for the viewer.

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BRM Project Layout - Dudley Heath

Introducing the 2011 BRM Project Layout - it's N gauge DCC, and features contemporary prototype. **Nigel Burkin** relates his experiences as a relative beginner making a start in N scale.

[illegible]

[illegible]

[illegible]

[illegible]

Diamond stacks in the desert

2. A member of the Blossom's Christian Temperance Union promotion suitcase has thrown a flatbroad thrown suitcase, while a gentleman chooses to settle an opposing sign. The structures are all reconstructed.

The Goldfield & Hangtown returns to the past with old-fashioned modeling methods

By Allen Wallace • Photos by Dave Lowe except as noted

I've been a model railroader since I was a child, and I've been a member of the Glendale (Calif.) Model Railroad Club for 40 years. But in recent years, my wife and I decided to build a home layout. Since I like the scenery in the eastern part of California and Nevada, I planned a railroad running from Goldfield, Nev., near the Nevada-Utah border, to Hangtown, a fictional mining town modeled after Virginia City, Nev., near the Nevada-California border.

A visit to Goldfield while researching trains in the mid-'70s gave me the chance to take numerous pictures of the town's still-standing structures (mostly). The trips included visits to Tonopah and Eureka (California Citizens Historical Society) and Bodie (Bodie Bluff Preservation Society), where I obtained valuable information.

I had a separate building maintained at home to provide a 24 x 25 foot room devoted entirely to the layout. Once the room was clear, I set up the interior (basement walls, painted black tiles, and tongue) tools on the benchwork.

Construction

The Goldfield is designed as a point-to-point railroad, with trains going from the staging yards in Goldfield on the west side of the benchwork as far as possible before returning to the staging yard. The tracks in the yard

9. A passenger train made on the Guildford station. The station is a Studio Miniatures Ltd. kit. Allen made the natural-looking desert mountains by covering canvas wire with plaster-dipped paper towels. He then glued on offcut real dirt.

8. A desert Southern Pacific steam 2-10-2 Consolidation customer uses to transport as a farmer prepares to leave with his purchase. Allen handled all the stable work on the layout, including the barnsides.

The layout at a glance

Name: Guildford & Hampton RR
Scale: HO (1:87.1)
Size: 20 x 25 feet
Theme: mining and logging
Locale: Sierra Nevada
Era: 1920–1970
Style: work in
Mainline run: 250 feet
Minimum radius: 30"
Minimum turnout: no. 4
Maximum grade: 3% planned
Benchwork: Open grid
Height: 48" to 60"
Roadbed: cork
Track: Handlaid code 70 both mainlines on hidden track
Scenery: Hydrocal soaked paper towels over screen wire
Backdrop: painted drywall
Control: run control

cars are assorted wine cellar. There's a concrete on rock and, mirrored with a cement I built wood parts on an article from Model Railroader in the 1970s and paints on an article about making grain for horse manure.

Trains leaving Guildford cross the Guildford Bridge and through a tunnel to Hillside, where sidings serve the cattle pens and the Empire Mines ore processing plant. Leaving Hillside, trains cross Tracket 11 to emerge at Snowplow Switches, where can the Snowplow are left on the mainline tracks to be plowed up by the local. The trains go through Canyon to emerge at Glenbrook, Nev., where the railroad serves the West Side Wood Works and Hawthorne Warehouse & Lu-

Track plan

Three seconds and some wide radius turns makes room for Twin Bridge Mining Station. Small here, the line proceeds to Hangtown, home to a small freight yard and a passenger station. After Hangtown, the railroad climbs through a long tunnel to the summit at Mount Tallac, then descends through Lincoln Pike, another mining town. Finally, Union enters at Hangtown. Passengers can buy Hangtown's two newspapers, the Daily Horse, or the Weekly to find out their journey.

At Hangtown, the railroad crosses over the C Central Pacific, from the mainline Pacific. This connection signifies the appearance of broad-cars and locomotives of the GP on the railroad.

Trackwork and wiring

My choice of ties with the space available but are no act a consistent radius of 30", as I believe the smaller cars and locos look better on curves of this size. I also installed all engineer track, using manufactured fibreboard ready to remedy.

I used a "piano wire" jig to hold wood ties on 30" centres and applied marking

Fake rocks and real dirt

Building from kits and scratch

A: A cable train makes its way past the cliffs at Mallacoota as cable are hauled up the gully toward the shunt pens. Allan made base molds of decomposed granite and used them to cast hydraulic cable on his Western Harvest layout.

B: Workers on the Hangtown freight dock prepare for the arrival of the local freight while a railroad trackman checks the work below his. He tools he needs. In addition to construction structures like the freight dock, Allan has constructed many of the cars on the railroad, including this one.

1 Lamont Goumbos Pacific No. Wheeler on 2016 pulls into Torrington depot with a passenger load. An interchange at Hangtown sets Atlas rail SP equipment on the G&H

The freight house and other structures at Goldfield are scratchbuilt, as are all the bridges and trestles on the railroad.

I used scenery things from Woodland Scenics for the rest of the structures in the town of Virginia City, like the various water installations and the rail-related buildings and train sheds. Most of the structures on Transport are scratchbuilt, though the cafe and downtown businesses are Atlas kits.

Weathering's structures are a mixture of kits, plastic buildings and scratchbuilt. All of the structures in the Twin Bridge Mining District are scratchbuilt.

Wherever possible, I made the doors on the scratchbuilt structures hinged or sliding. Electric lights were introduced over long before the local representatives, so some buildings are lighted, and the streets have gas and kerosene light poles that are the subject of always fun activity.

Like the structures, I enjoy building wood cars from scratch, as I made most of the boxcars, gondolas, and flatcars. The others are to the modelers of the early coast lines to Ashbrook of Nevada and Hanson Lumber and features of the Southern Pacific. The old trees and cars are from Model Die Casting from parts of Milwaukee.

My passenger cars are La Belle kits, with some Custom Valley bodywork and other kit-built bodies.

The few steel locomotives of the GROWS are wood because because the latter formulas provide a plentiful supply of fuel. Later acquisitions and locomotives based from the SP have oil.

Past and future

I get inspiration to model railroading in the small size, with a small room as a child. My very first was Lionel 027 gauge in 1941. Following World War II, I returned to college. As kid now, some was after more, I stopped as at the Timed Area, Lionel shop, where I was introduced to HO scale. I have since collected a complete set of Model Railroader magazines from December 1952 to the current issue.

I try to do a little bit every day on my layout via home server, but I'll admit that maintenance can be a problem when new pieces fall, so I intend to start my own layout at a much younger age.

Meet Allan Wallace

Allan has won numerous trophies and awards for his scratchbuilt steam locomotives, including a first place at the 2008 NMRA National Convention in Anaheim, Calif. He lives near Glendale, Calif., with his wife, Joyce; together, they have a daughter and two grown children. His other interests include ice skating, skiing, photography and USC Trojans football.

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HAWKINS RAIL

John Fiske suggests something a little different to add some variety to regular operation on the layout. Photographs by the author.

The work train

Rolling stock dedicated to Maintenance of Way service

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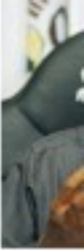
What type of leader for Nigeria?



"The main opposition parties have a good chance of grabbing presidential power, but they must inspire Nigerians to vote for change."

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Goodluck Jonathan
How he is selling his candidacy

If you do not get the matter of the Niger Delta right, then you will not get Nigeria and West Africa right.

THE ROLE OF LAW

[redacted]

The Niger Delta
Nigeria's central element

"The President's track record is there to show"

The one determination we have is to make the system and the institutions work and also to make Nigerians protect their votes.

Electricity is still a priority for Nigeria

Nigeria's Minister of Power, Works and Housing, Mr. Mike Onolememen, speaks at the 2012 Africa Energy Forum in Atlanta

[illegible]

Mali's example in bio-fuel production

[illegible]

"Africa produces a range of crops that could be used as biofuel, including sugar cane, sugar beet, maize, sorghum and cassava."

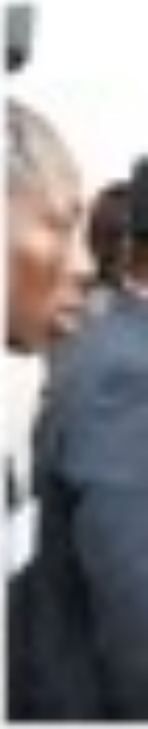
Scientists are working to develop crops that can withstand extreme heat, drought, and other effects of climate change. Photo courtesy of Wageningen University & Research

> **"Developing these crops for tomorrow's risks requires a pool of the world's genetic resources, in particular those that are native to increasingly hot and dry areas."**

See Africa from a different perspective on
AFRICA BUSINESS REPORT
AFRICA
BUSINESS

Today, not many people remember that the Czech Republic was a colonial power that owned a number of territories in Africa and Asia. Now, a former foreign minister of the Czech Republic wants to reverse this trend. **Rob Hakkenberg** reports from Prague.

Time to renew ties



Obama and government officials during a visit to the Czech Republic in April 2009

On 5 October 2011, the Czech Republic's foreign minister, Karel Schwarzenberg, announced that his country would be opening an embassy in Ethiopia's capital, Addis Ababa. The decision was part of a broader effort by the Czech government to increase its diplomatic presence in Africa. Schwarzenberg's announcement was met with a mixture of surprise and scepticism by the Czech media. Many questioned the wisdom of opening an embassy in a country with which the Czech Republic has relatively few economic ties.

Schwarzenberg's decision to open an embassy in Addis Ababa was the latest in a series of moves by the Czech government to increase its engagement with countries in Africa. In 2010, the Czech Republic opened an embassy in Nairobi, Kenya, and in 2011 it opened an embassy in Luanda, Angola. The Czech Republic also has embassies in Pretoria, South Africa, and Abuja, Nigeria.

The Czech Republic's renewed interest in Africa is driven by a number of factors. One of the most important is the country's desire to increase its exports to the continent. The Czech Republic has a relatively small economy, and its exports are heavily dependent on the European Union. The Czech government hopes that by increasing its presence in Africa, it will be able to open up new markets for Czech goods and services.

Another factor driving the Czech Republic's renewed interest in Africa is the country's desire to increase its influence in the region. The Czech Republic is a member of the European Union, and it hopes that by increasing its presence in Africa, it will be able to play a more active role in shaping the EU's policy towards the continent.

The Czech Republic's renewed interest in Africa is also driven by a desire to increase its development assistance to the continent. The Czech Republic is a member of the European Union, and it hopes that by increasing its development assistance to Africa, it will be able to help the EU meet its development goals.

The Czech Republic's renewed interest in Africa is not without its critics. Some have questioned the wisdom of opening embassies in countries with which the Czech Republic has relatively few economic ties. Others have criticised the Czech government for its decision to open an embassy in Addis Ababa, arguing that the country is not a priority for the Czech Republic.

Despite the criticism, the Czech government is committed to its renewed engagement with Africa. The Czech Republic is planning to open an embassy in Dar es Salaam, Tanzania, in 2012, and it is considering opening an embassy in Kampala, Uganda. The Czech government hopes that by increasing its presence in Africa, it will be able to help the continent to develop and to increase its exports to the region.

"Apart from their current partners, African nations should build alliances with successful Central European nations like Czechoslovakia."

In the last years, more Africa-based than ever before, migrant entrepreneurs have been moving to and from countries in Africa in search of new opportunities. Despite the challenges they face, they are creating jobs and contributing to the economies of the countries they live in. **Ola Wahlgren** reports.

Africa's migrant businessmen

Ladies' fashion stalls at the Kejetia market in Kumasi, Ghana. Many of the traders are migrants from neighbouring countries.

The arrival of a new fashion store in Kumasi, Ghana's second largest city, is always a big event. Customers flock to the shop to see the latest collections from Europe and the United States. Many of the clothes are sold at prices that are beyond the reach of most Ghanaians. But the store's owner, Lebanese businessman Ali Hamdan, is confident that there is a growing middle class in Ghana that can afford his products.

Hamdan is one of many migrants who have moved to Ghana in recent years to take advantage of the country's economic growth. Ghana's economy has been expanding by around 5% a year since 2000, and the country's oil reserves are expected to start generating revenue in 2010. Many migrants have also been attracted by the country's reputation for political stability and relative lack of corruption.

Hamdan's father moved to Ghana in the 1960s and started a business importing textiles. Hamdan followed in his father's footsteps, but he has also diversified into other areas, including property development and the hotel business. He has invested $2m in the fashion store, which opened in December 2008. He says that he has been pleased with the response from customers so far, but he admits that it has been a challenge to find reliable suppliers of high-quality goods.

Hamdan is not the only migrant businessman in Kumasi who has had to overcome difficulties in order to succeed. Many of the traders in the city's Kejetia market, which is one of the largest in West Africa, are migrants from neighbouring countries. Some have been in Ghana for decades, while others have arrived more recently in search of opportunities. Many of the traders have also had to overcome difficulties in order to succeed.

Kejetia is one of a number of markets in Ghana that have been attracting migrants from neighbouring countries for decades. Many of the traders have also had to overcome difficulties in order to succeed.

Despite the challenges they face, migrant entrepreneurs are playing an important role in the economies of the countries they live in. They are creating jobs, contributing to economic growth and bringing new skills and ideas to the countries they live in.

"Running their own business provides refugees with an effective way of overcoming the barriers in entering the UK job market."

"Many African refugees cannot use their skills as doctors, lawyers or teachers because their qualifications are not recognised in Britain."

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Our editor Ibiba Jubo-Amakiri reports on the winners of the African Women Figures and Awards, organised by Cameroon-based publishing group Avenir Presse, and shares with them a moment of quiet reflection. Report by **Ibiba Jubo-Amakiri**. Original photos by Joseph Ahanda

New African wins awards

Nine outstanding women, plus one man, were honoured at the 2011 African Women Figures and Awards ceremony, held in Douala, Cameroon, on 8 March, International Women's Day.

The awards, which are the brainchild of Cameroon-based publishing group Avenir Presse, are designed to celebrate African women who have made a significant contribution to their communities and to the continent as a whole.

Among the winners were Nobel Peace Prize laureate Leymah Gbowee, Liberian peace activist and founder of Women Peace and Security Network Africa; Ghanaian-born Ambassador Mary Chinery-Hesse, who has served as Deputy Director-General of the International Labour Organisation; and Cameroonian Professor Pondi Jean-Emmanuel, Director-General of the Institute of Research and Agricultural Development.

Also honoured was Ivorian singer Dobet Gnahoré, who was given the "New Generation" award.

The organisers of the awards, Avenir Presse, also gave the "New Generation" award to Ivorian-born Ambassador Henriette Diabaté, who is currently Côte d'Ivoire's Permanent Representative to the United Nations.

The Peace Excellence award was presented to Ivorian-born Ambassador Aminata Dramane Traoré, who is a former Minister of Culture in the Côte d'Ivoire government and a prominent anti-globalisation campaigner.

Nigerian-born Professor Ibidapo Obe, who is the Vice-Chancellor of Crawford University, Nigeria, received the "Excellence in Education" award.

The "Excellence in Health" award was presented to Professor Marie-Louise Eteki Mboumoua, who is the Minister of Health in the Cameroon government.

Nigerian-born Professor Dora Akunyili, who is the Director-General of the National Agency for Food and Drug Administration and Control (NAFDAC), received the "Excellence in Public Service" award.

Ghanaian-born Professor Nana Apenteng Konadu Agyeman-Rawlings, who is the First Lady of Ghana, received the "Excellence in Leadership" award.

Nigerian-born Professor Grace Alele-Williams, who is the Vice-Chancellor of the University of Benin, received the "Excellence in Education" award.

The "Excellence in Health" award was presented to Professor Marie-Louise Eteki Mboumoua, who is the Minister of Health in the Cameroon government.

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Africa's sons and daughters and other non-Africans who have distinguished themselves and greatly contributed to the continent – including current & retired Heads of State – were honoured at the 2nd Africa Awards ceremony held in Ghana, reports **Stephen Kyazi Ao**.

Awards for Africa's great and good

The 2nd Africa Awards ceremony was held in Accra, Ghana, on 25 October 2014. The awards were created to honour Africa's great and good – the visionaries, leaders and pioneers who have made a significant contribution to the development of the continent. The awards are the brainchild of Ghana's Chief Executive Officer of Charisma Group of Companies, Dr Kwabena Boahen Asiedu.

Dr Asiedu says the Africa Awards are meant to "inspire the next generation of leaders and public spirited individuals to be more for their countries."

Mrs Koroma We will make a difference

"I am working to further reduce Sierra Leone's child and maternal mortality rates with the help of the government and the UN family."

African heroes, your heroes!

Ndugu Rugunda, the hero just back from the UN

"As president of the UN Security Council, Dr Rugunda drew attention to the plight of the continent while making the case for the international community to support African-grown solutions to Africa's problems."

Jon Barnett on how his uncle's boxing career helped Lloyd Barnett, who emigrated from Jamaica to England and has gone to another world

My hero, Lloyd Barnett, the boxer

"In the 60s, there were very successful black boxers in America and elsewhere. Like his hero, Joe Louis, my father made a name for himself."

Stephen Kyerie has gone back to his roots by writing a book on Mansa Musa of Mali as his hero. He was inspired, he says, by a need to counter a misconception among people in and outside the continent that Africa – and Africans – have no history. Here, he tells us why Mansa Musa remains the right role model for Africa and the world

Mansa Musa, the hero

"During Mansa Musa's famous pilgrimage to Mecca, his and his company gave out so many gifts of gold that its price fell in Egypt."

Making the Diaspora work for Africa

"Development agencies see the diaspora as a significant future source of development capital – human and financial – for Africa."

ON LOCATION

125 years of the Belgian

Coast tram

Gary Tyrrell uses an hour in a minibus as an excuse to travel on the metre gauge line which still serves the scenic coast of Belgium.

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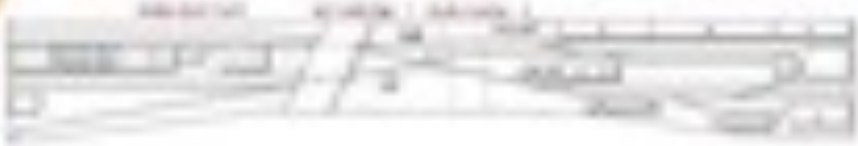
Alan Whitbourn describes his permanent home layout, built in a narrow basement train room, which provides plenty of scope for switching across most industries

Pipestem Creek

Americana Class in comparatively tight space



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Model a demolished house

Use scrap pieces from old laser-cut kits

By Al Skinner ▸

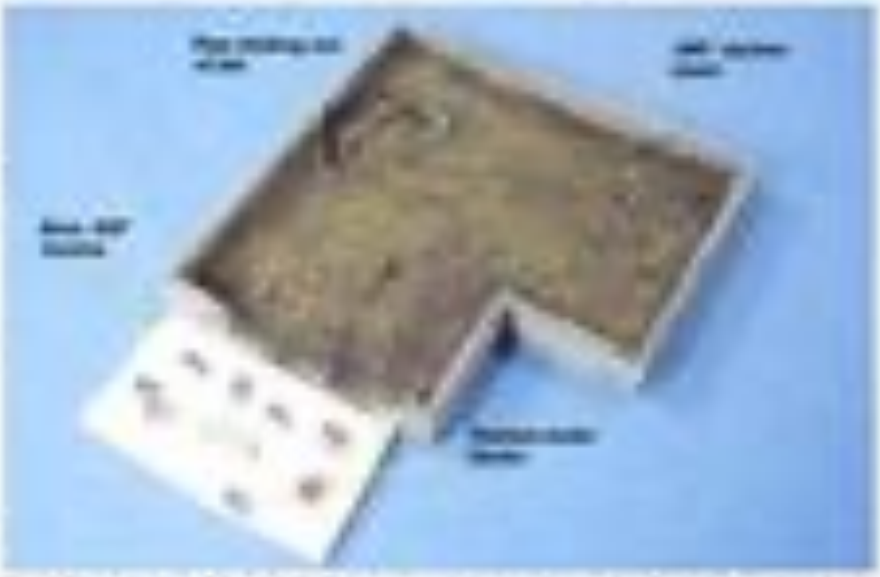

Fig. 1 Foundation. As usual, ditto anyone to model the house foundation. He then added a knocked-down wall, piping, and similar blocks for more detail.

Fig. 2 Drill sixteen 4½ built this corner of the roof and left it intact to give the debris pile more detail.

Model debris

I installed long chunks of debris, breaking up pieces with over fingers and cutting different lengths of wood under the pieces look multiple. Doors and windows broken can be made by cutting out inside the edges of any rectangular hole in the window sheets.

Scrape with sandpaper on these also work well for this. If you don't have any scrap pieces like this, I recommend splashing some paint, stain or weathering powder on pieces of suspended wood.

You can add detail to the pile of scrap wood by adding a few more of the scrapped bits not fully assembled. As you can see in **Fig. 3**, I drew part of the roof, but now you can see the same technique to make a panels or as interior or exterior wall.

Once the debris pile is complete, I pressed the foundations on the pit. It will look best if the walls are parallel to the lot lines, but set it as you like and mark the outline on the scenic base. The top of the foundations should be at least one scale foot above ground level.

To make this scene more convincing, I heaped up a little pile of debris, glued the roof over the pile, then added more debris where needed. When the pile looks like way you want it to, I covered it once with diluted white glue.

Another application

You can use the same foundation modeling ways as the start for a farmhouse, brick, business or industrial detail such as a road pile of bamboo, corrugated metal, wood beds. Either way, this technique will provide an interesting view for your layout. ☐

Al Stamer is from Arlington, Texas. His N scale layout is featured on the Steam Railroading DVD and is set in the Chicago area in 1951.

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Add two decoders to a brass locomotive

Mike Polegrove explains how he added motor and sound decoders to a Bowser 2-8-0. Photos by the author.

Fig. 1 Installing the motor decoder. Mike attached the Loco Stays fiber decoder to the top of the motor with double-sided foam tape. He put electrical tape on the inner surface of the boiler to prevent a short circuit.

I have a number of older brass steam locomotives that I want to operate with Digital Command Control (DCC) and sound decoders. This month, I'll show you how I added two decoders — one to the motor and one for sound — to a Bowser Consolidation (2-8-0 originally NYC&HR Hudson type). Even though the 2-8-0 is an 0-6-0 cab model, it has a relatively small boiler and so-so pulling power.

Thanks to the popularity of the new 2-8-0 Pacific Park Mallet steam locomotive, many more steam locomotives have been

Fig. 2 Factory-installed motor wires. On the Kamtrooper 0-6-0, two wires supply power to the motor. The left photo shows the first wire soldered to a screw above the front drivers. The right photo shows the second wire soldered to the screw that holds the sprung armature in place.

in the hands for a quieter and better-to-the-ears than when the sound is no ago. You can make a decisive entertainment the money of the locomotive, which helps when installing DCC decoders.

The success of any decoder installation depends upon proper planning. The first thing I did was run the locomotive on DC to see if it operated well and over what rpm would control the motor down. I found my locomotive a scale 18 mph.

I then removed the three screws that hold the boiler to the frame. The first is a long screw that is under the frame by the motor. The other two are on the back of the locomotive under the cab. I was pleasantly surprised to find there was some tolerance between the inner surface of the boiler and the top of the motor for a small motor decoder.

Next, I removed the two screws that hold the motor to the body frame (I found I could fit a 1" diameter socket and a sound decoder inside.

Although I was installing two decoders, I still wanted two-way wire between the engine and the locomotive. I do that these days to minimize stuck pin, the tender picks up power from one rail and the locomotive from the other. This installation removes the two metal tab power from the tender to the locomotive's motor. With the wires wire, I would get the other rail's power back to the tender.

I used a Loco Stays Silver motor decoder with back-electromotive force control (item# 6305). This decoder has exceptional low-speed control and could do so the 2 at 9-10 capable of supplying 500 mA, which is more than sufficient.

I stay from the decoder to the top of the motor with double-sided foam tape, as shown in **Fig. 1**. Since the boiler is aluminum, I insulated the inside of the boiler with electrical tape to prevent a short circuit. Don't wrap the decoder in tape or heat shrink tubing, as this may lead to overheating.

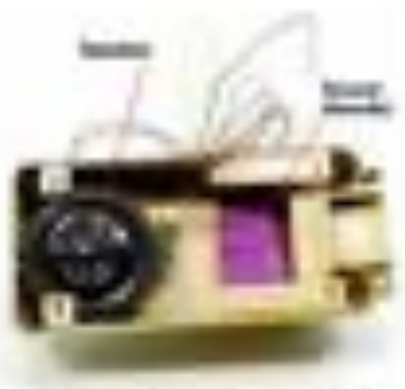

Fig. 3 Sound decoder Mike mounted the speaker and enclosure in the rear of the tender. He used double-sided foam tape to hold the decoder in place.

Fig. 4 Capacitor This capacitor helps prevent power for the sounds from being interrupted if the locomotive encounters dirty rails.

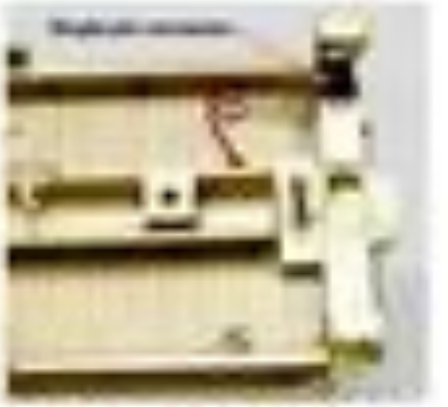

Fig. 5 Connected Mike used a single-pin connector to attach the red wire from the sound decoder to the black wire on the locomotive frame.

As built, new wires small covers to the sound locomotive's socket. I fed a red decoder wire through a hole in the cab floor and the other (a white) to the screw that secures the driveline, as seen in **Fig. 5**. I soldered these wires and soldered the red decoder wire to the wire attached to the trucks. I also fed the black wire to the driveline screw.

On the 21-8-0, the frame picks up through the right-hand wheels and the center from the left. I soldered another wire to the frame to carry right rail power back to the center for the sound decoder. Even though this wire is connected to the locomotive frame and rail wire, I used a black wire as a model for non-obvious behavior like locomotive and the tender.

I soldered this orange and gray wire from the decoder to the center terminal. If the locomotive lost a mounting bolt, I would have attached it to the blue and white wires. I insulated the exposed wires and wrapped them with electrical tape.

Before reassembling the engine, I tested the sound decoder by placing the locomotive on my test track and checking the red wire to the right rail. Before I ran the locomotive, I used track 1 to run the decoder's programming commands.

I then put the locomotive and tender back together. I removed the orange and gray wires, routed the engine wires, and reassembled the locomotive. You can also connect the wires with configuration-variable 4, 1, 1, 19.

I chose the SoundTraxx Micro Tsunami for the sound decoder. The decoder has quality sounds and fits easily into the tender with my speaker. I wanted to use the largest speaker I could: a 2" diameter speaker and enclosure from Soundtraxx (part number 810131).

I first drilled a small hole in the side of the speaker enclosure and fed the speaker wires through the hole and soldered them to the speaker terminals. I also fed the decoder wires (the red headed with double-sided foam tape. I then secured the speaker into the enclosure and attached the decoder to the top of the inside of the tender with the foam tape, as shown in **Fig. 3**. I soldered the black wire from the decoder to the inside of the tender floor. Finally, I drilled a hole into the tender floor so I could route the red wire through the opening.

I wouldn't use a capacitor (pictured) that's higher than 1000 microfarads (uF) as the sound decoder tries calming out and dirty rails. Since I had none in the capacitor, I soldered the negative side (with the stripe) to the gold-colored wire and the positive side to the blue wire. See **Fig. 4**.

I wanted to use the Soundtraxx as the sound decoder. I would have needed to add a bell. Like a small light bulb, to the orange and gray center wires. I didn't feel the need to mod track on it. Instead, I tested the sound decoder by placing the tender on my test track and checking the red wire to the right rail. I then connected the black line to the red track and reinstalled it. I mounted the wheels and left and ran the decoder through its range of speed steps.

I used a small single-pin connector to link the red wire from the sound decoder with the black wire attached to the locomotive frame. I connected the female side of the connector to the tender floor with Loctite Hob adhesive, as shown in **Fig. 5**, and soldered the red wire to it. I soldered the black wire from the locomotive to the male side.

I tested Quick Decoders by attaching the tender to the locomotive and connecting the carry wire between the two. It's important to remember that there are also two decoders programmed in the same address. Because they're built on the old track configuration variables 29 the address number switch decoder will be programmed at the same time. Other than the address, leave all the CVs standard to program multiprotocol.

I first adjusted the chuff rate of the sound. I have several decoders to match the sound of the Loco steam decoder. I found that by programming CV 124 to the sound decoder to 30, I was able to get a chuff per revolution at that speed.

Then I selected the appropriate bell. I like that programming CV 113 to number 1 gave me a whistle close to those six-notched tone. I like locomotives.

By planning the installation before hand and taking my time, installing the sound and lighting was easy. Installing the sound and lighting decoders in my three 1-4-0 was accessible and turned out to be an enjoyable project. You can see more of Mike's techniques for your locomotives on Trains-Model-Locomotives.com.

Send your questions about Digital Command Control to Jeff Wilson, Model Railroader magazine, 9301 Kent Rd., Strasburg, WI 53158, or e-mail jeff@trains.com. We regret we can't answer all the questions we receive.

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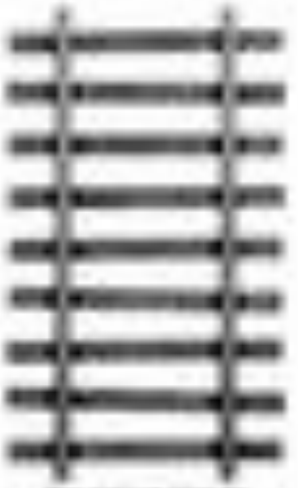

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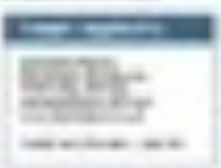

Two new digital command control decoders from Digitrax

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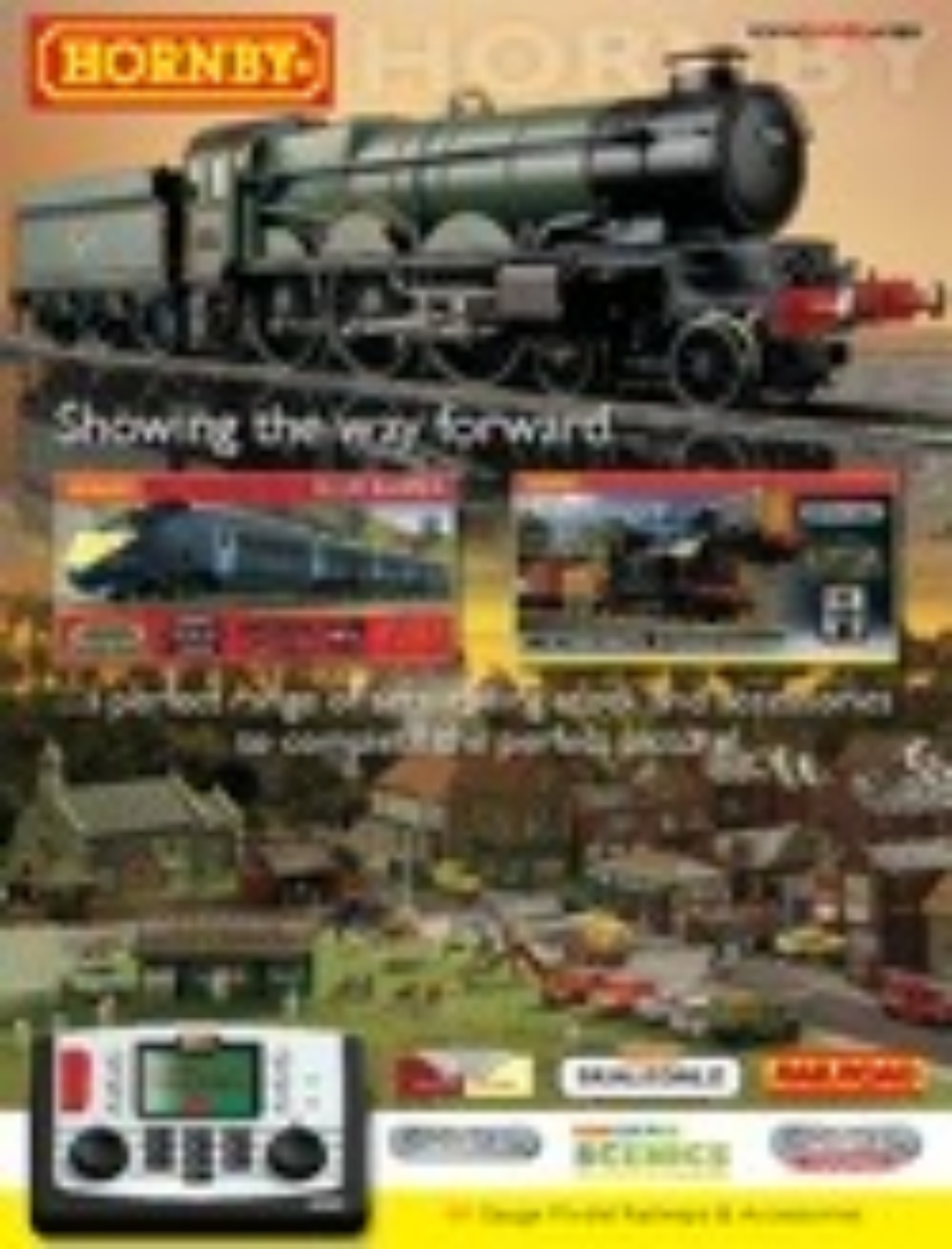

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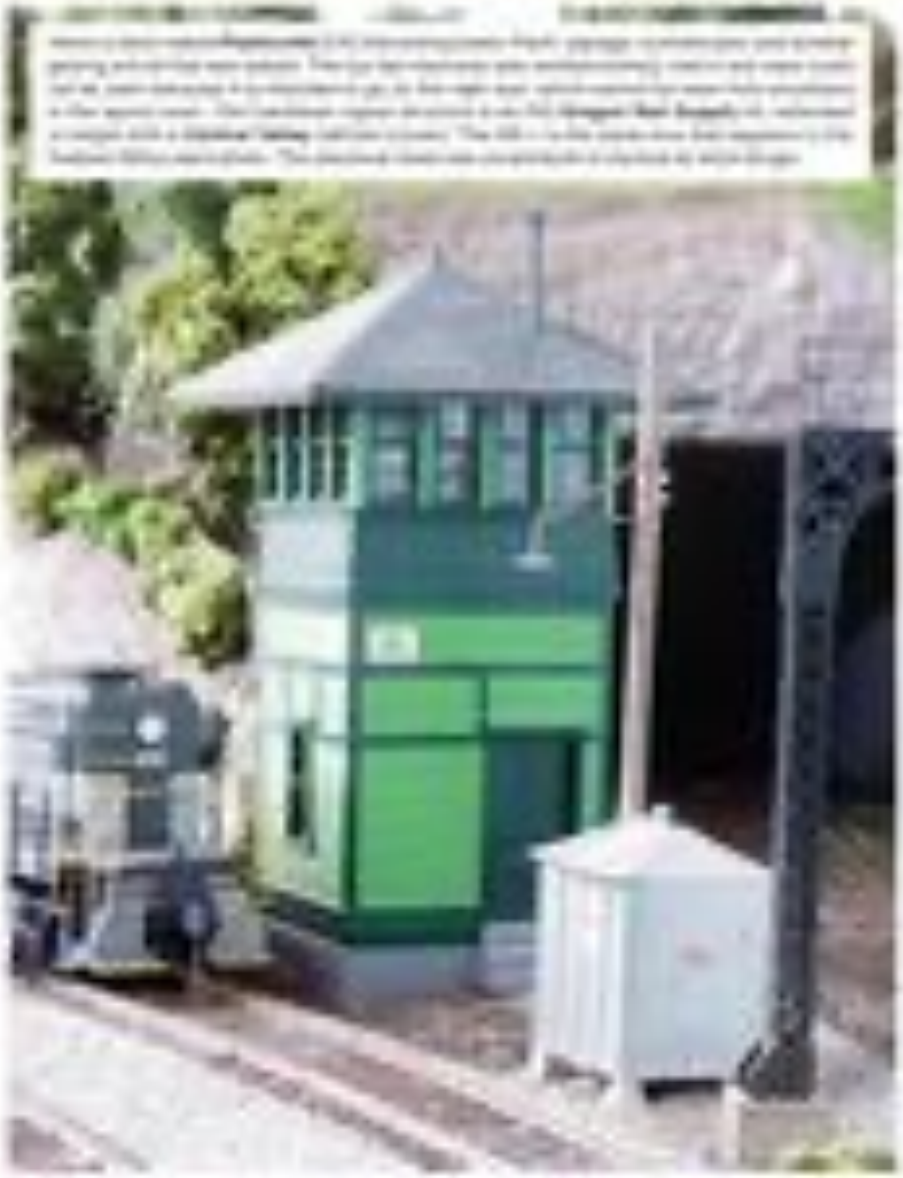

Mentioned in this column

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Atlas Model Railroad Company
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Bob
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Electronics Promo
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Keystone Line: Moving the Layout and Digital Switch Control

KEVIN GROSKREUTZ — Welcome to another month of N Scale and another new episode of Kevin Googles on the Keystone Line layout. This might seem like a bigger title than the layout's current DCC switch control transformation is warranting, but it was a very long, tortuous day when I ran out of switch machines and had to start converting my switch controls over to the Digitrax system.

Today I expect you'll see many changes to the main track area, since we've got new turnouts and a new control system. Also, I'll show you a few of the wiring changes I made to the layout's benchwork to accommodate the new switch machines. Finally, I'll show you how I've been using my new Digitrax UR92 transceiver to control my locomotives with my iPhone.

Disassembly Procedure

First, I made sure I had all the trains and fiddle items off the layout, especially the one-of-a-kind items. I then disconnected the track power wires plugged into the left-side module's terminals. This allows me to slide all the module's turnout leads and track feeders out of the way. This is the only module where the turnout and track-power leads are the same, so I also had to disconnect those to remove it from the layout, and I'll do the same every time I put the layout together. I didn't want to forget to do it once!

I then lay the layout back, carefully lifting it by the cross-ties (never by the rails or ties), and unscrew the left- and right-side risers. Originally, the layout was built so that the risers could be screwed directly to the layout's benchwork, but I decided to add 1-by-2 cross-braces to the modules. This has made lowering them to transport and put them together much easier, though it means that I have to remove the cross-braces to get the risers off. I then unscrew the modules from the layout's benchwork and gently slide them apart, being careful not to damage the wires that bridge the gap between the modules, and put them on the other bed in the folks and retire functions. Finally, I unbolt and separate the two center modules, which have no track crossing between them.

So, over 3 hours (two separate sessions) and 2 months of business and travel from Texas, I now have each of the modules removed.

Setup Procedure

Setting up the Keystone Line is basically the disassembly procedure, but in reverse. I do, however, have to assess the center modules, although it's straightforward once I've done it a few times. After connecting them together, I check the level of the track crossing them to the left module.

Either way, I have to ensure the risers rest on the benchwork cross-braces before I screw them down. I also check the gap between the modules to make sure they're not too close or too far apart. Finally, I check the alignment of the tracks between the modules. This is usually the most time-consuming part of the setup, as I have to make sure the rails are aligned and the modules are level with each other. Once I'm satisfied with the alignment, I screw the modules together.

Next, I connect the track-power feeders to the terminals on the left module. I then connect the turnout leads to the terminals on the left module. Finally, I connect the DCC bus wires to the terminals on the left module. I then plug the modules' track-power feeders into the terminals on the left module.

Once all the modules are reconnected, I do a quick check of the track and wheel alignment on the left module. When I'm sure all the wiring runs are correct, I plug the layout up to my Digitrax system and check all the new wiring and turnouts to ensure that everything is working properly. Once everything is plugged back in, I slide the left module's wiring and track connections out of the way and put a pair of wooden blocks under the track joints (the rail joiners) on both the left and right modules. This will help keep the modules from moving when I'm working on the layout.

Now, I add the new turnouts to the layout. Because I'm using Digitrax DS64 switch machines, I have to drill a hole in the benchwork for the machine's throw bar. I then screw the switch machine to the benchwork and connect the throw bar to the turnout's throw bar. Finally, I connect the switch machine's leads to the terminals on the left module.

Once I've added the new turnouts, I'm ready to test the new switch machines. I do this by plugging the left module's track-power feeders into the terminals on the left module. I then power up the layout and test the new turnouts. If they're working properly, I'm ready to move on to the next step.

All photos by Kevin Groskreutz unless otherwise noted.

Underneath it all is what looks like quite fun. Wires and wiring may hold the modular together, but behind it is a lot of work has been done. Technical issues will be the least of your worries, and all, from master MIDI/USB controllers to the most technical...

keys—they gave me some ideas on how to do this easily. In other words, how product-market relationships should be placed and the electronics above it could be connected to separate.

DAC Switch Control

The goal of making the device open-source, from giving you the device example, was to allow it all to be done using voltage to control switch connections. I had operated the switches manually shorts to the body and that. After, given one pin the side of each Four Tracks switch, like once I got the Texas Digital 74HC4051. I wrote a small Arduino

The 74HC4051 is a 8:1 (8-input/1-channel) demultiplexer which allows the Atlas easy and economical control of the switch with some restrictions. It can control 8 of these type of switch, and multiple 74HC4051s can be used together to control more switches. Conveniently enough, the Arduino Uno will have to provide each of these 8 control signals, making one 74HC4051 a perfect fit.

With some tool and explorer help from my father Keith, I got the 74HC4051 wired all to the bottom of the middle position. We then set to work running over wires to each switch, which is very time-consuming work as

Here is the top. Originally I wanted to use breadboard, but I ended up using a perfboard. I used female headers to connect the Arduino and 74HC4051 to the perfboard, which allowed me to easily remove them if I needed to. I also used male headers to connect the perfboard to the Atlas. I soldered the female headers directly to the perfboard, but I soldered the male headers to the Atlas. I used male headers to connect the perfboard to the Atlas because I wanted to be able to easily remove the perfboard from the Atlas if I needed to. I also used male headers to connect the perfboard to the Arduino because I wanted to be able to easily remove the Arduino from the perfboard if I needed to.

the recessed blocks that carry the DAC's push points. We thought to solder several together where wire connections between the switch and the circuit boards' connectors connected.

At this point, I got to work programming the Arduino. Initially, as many would, I thought to write and upload a program to the Arduino that would poll all inputs, a capable of 8/8 built-in, to control the switch connections. This proved to be unnecessary, as I realized that I could use the DAC's interrupt to only update the switch connections when a change occurred. This saves the Arduino a lot of unnecessary processing time, as it only has to update the switch connections when a change occurs. This is a very efficient way to control the switch connections.

So when you run the Arduino, it will first initialize the DAC and then enter a loop. In the loop, it will check if the DAC has generated an interrupt. If it has, it will read the DAC's output and update the switch connections accordingly. If the DAC has not generated an interrupt, it will simply continue to the next iteration of the loop.

This is a very efficient way to control the switch connections, as it only updates the switch connections when a change occurs. This is a very efficient way to control the switch connections, as it only updates the switch connections when a change occurs.

Maisto's Highway Patrol '55 Buick is 10-8!

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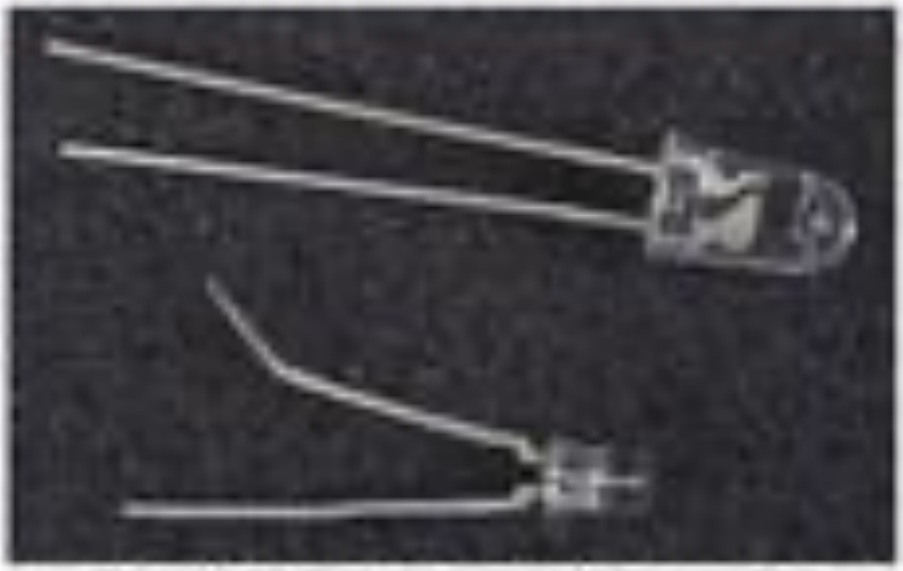

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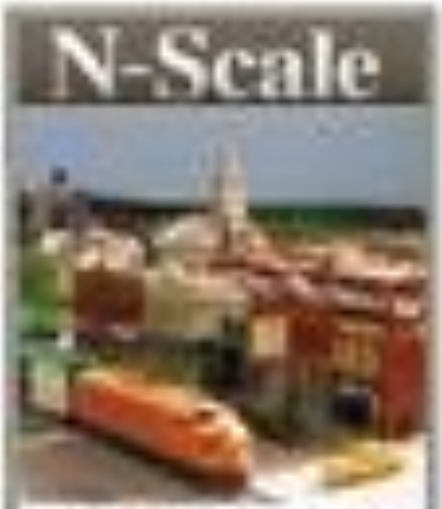

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A Tony-built Bow-ter 1 emerges from the Shawnut. Tony registered as Nyon Aviation Cert.? Gilbert Ave & Tibbet Cir. (redid tattoo). Sorry, at Hornby Cir., scratched the eyeglass from wooden yellow shirts and ran tagged metal roofing. Inverted. He also took the photo.

Michelle Kearns of Irvine, Ark. took this photo of a Lilo Lilo Point 1400 HO scale. Her Fly 1 on a Rocky Mountain diorama built by her friend Joyce Kirkes also of Irvine. Carole photographed the diorama using natural light through the window of the train room.

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BAY MODELS

rainer

Tony Koester

A laser level makes transferring this known elevation of a key part of the railroad — say, a main yard — to every other part of the railroad as easy task, especially if these measurement markings are made prior to construction. Tony Koester photo

Benchwork on the level

There are so many things that have or so she has built under railroads who be grouped that are quite puzzling, or even occur, as newcomers. Indeed, the continued existence of this magazine is a testimonial to the principle that staying entertained or the hobbyist spans which man-hobbies a hobb.

Among the head-scratchers for the modern rider is building box or flat-bed model railroad are the layers about every inch, we're native and inconsistent grade. Errors of judgment here will affect the enjoyment of the railroad for as long as it continues to exist.

Like most questions, the answers to these not-yours begin with the phrase, "It all depends." The minimum radius that will travel your locos depends on a pair of errors — one can eliminate those by simply buying more engines with more flexible trucks. Most rail-RTR 1, or 1½-inch-wide. But that doesn't mean one should.

Imagine a reasonably comfortable 24 or 30 curve on 18½ and this creates the same curve is ½. Just because one could on a shelf-style doesn't mean one have to challenge everything one might do (or DO) for 14 percent 24 / (model by 249). One advantage of a smaller scale is that one can build a smaller layout for as much genesis here is that one can build more railroad in the same footprint.

Grades are another source concern. Here is a phenomenon rated, or 2.1 per cent grade or 2½ inches the wave on a 2 percent grade or 2.7 (for now). Will some trailers, underwater, fun, scale feet, whatever) the railroad goes not-west. A man I used, to a 4 percent grade, which is pretty steep to 450, a also pretty steep in 2, ½, or 3.

When I designed the Allegheny that lived back in 1973, I did some experimenting to find out what constituted a steep grade. The J&P was a mountain railroad, so I actually wanted grades with enough to require builders on longer trains. And I knew from reading about real-life railroads that steep curves add to the burden of a locomotive trying to haul a train up the hill. So here, in my days before we knew railroad designers actually rated curves as steep grades in simplest the two lines of the railroad designs on the sides of the card to help slow downhill trains.

Tests showed that the planned 30" minimum radius and 2.5 percent grades worked very well. Problem were usually located on curves of 30 inch or more. Equally important, however, I discovered that grades steeper than 2.7 percent often caused drivers (wheel locomotives) to slip and spin on the track in the gear drive rod to seat out on the main powered against the locomotive. Worse, wagons or the gondola often helped, too. It was easier to design the railroad to access, except the coal mines of the 1970s.

It's now fitting to have short-cut locomotives that it's more another reason to construct the railroad to avoid these engineering goals. One is double-line on a main-line railroad like our N. Lines (the area of the Model Plan, or can one) is becoming the beginning or end of a several grade or the gradient will affect the clearance between decks.

I'm look my 4-6-0 and 4-8-0. I had yards and cranes time. You want a reason to switch and spot cars without having an area which chunks to keep them from rolling away. I also ready on return to run time-telling trains on the 4-6-0, so I want at a lot of trouble to explain the use of big steam engines, multiple-unit diesels, and shelves. On the 4-8-0, where double-headed steam locomotives were used only to enhance speed and power, between the two trains the opposite is true. I put the steam two rolling models I can find.

The MAP divides commercially between trains in the northeast direction to gain enough elevation for the second deck without using a spiral helix. This depends on having a long enough run on one leg around the basement walls and back sides of the control peninsula. With the exception of extension 2 group (5-8, which was steep and a lot to comes out, one train to on on trains, current gauge story 1 welcomed grades to 2 percent or less.

Room 1 around the upper deck to be a bad a line above the lower deck. That meant I avoided a sensitive rule — can't as chasing trains, remember — of at least 4½ but to gain that foot of elevation. Whereas the wide-wide long-radius curves that would have been difficult

Once I got the elevation at any point on the railroad, calculations elsewhere above the basement floor (which wasn't perfectly level) ceased to be relevant. Rather, I then had to worry well about the difference in elevation between two curving trains, so that determined the actual grades with one rules.

So, above on the plans I have broke today transferring a reference elevation across the room on each station. Before construction, I recommend running a set reference elevation line around the perimeter of the room and measuring every other elevation up or down from that.

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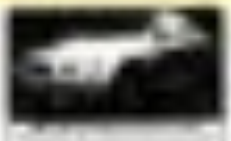

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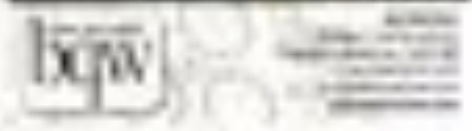

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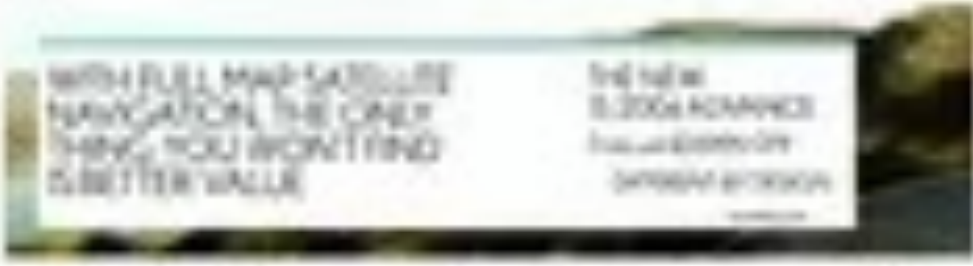
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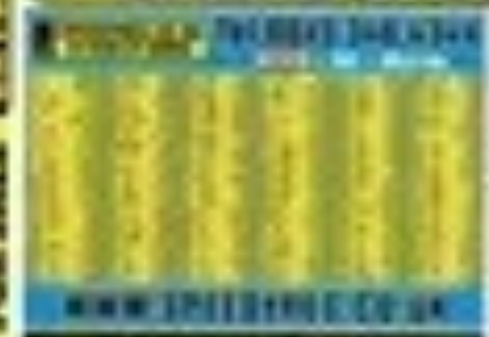

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